European University Institute
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CARIM-East – Creating an Observatory of Migration East of Europe

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Methodological Aspects of Research on Flows Human Capital Flows: A Survey

Alessandra Venturini

CARIM-East Research Report 2012/01

MIGRATION POLICY CENTRE

CARIM-East
Creating an Observatory of Migration East of Europe

Research Report

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Methodological Aspects of Research on Human Capital Flows
A survey

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CARIM-East – Creating an Observatory East of Europe

This project which is co-financed by the European Union is the first migration observatory focused on the Eastern Neighbourhood of the European Union and covers all countries of the Eastern Partnership initiative (Belarus, Ukraine, the Republic of Moldova, Georgia, Armenia and Azerbaijan) and Russian Federation.

The project's two main themes are:

(1) migration from the region to the European Union (EU) focusing in particular on countries of emigration and transit on the EU's eastern border; and

(2) intraregional migration in the post-Soviet space.

The project started on 1 April 2011 as a joint initiative of the European University Institute (EUI), Florence, Italy (the lead institution), and the Centre of Migration Research (CMR) at the University of Warsaw, Poland (the partner institution).

CARIM researchers undertake comprehensive and policy-oriented analyses of very diverse aspects of human mobility and related labour market developments east of the EU and discuss their likely impacts on the fast evolving socio-economic fabric of the six Eastern Partners and Russia, as well as that of the European Union.

In particular, CARIM-East:

- builds a broad network of national experts from the region representing all principal disciplines focused on human migration, labour mobility and national development issues (e.g. demography, law, economics, sociology, political science).
- develops a comprehensive database to monitor migration stocks and flows in the region, relevant legislative developments and national policy initiatives;
- undertakes, jointly with researchers from the region, systematic and *ad hoc* studies of emerging migration issues at regional and national levels.
- provides opportunities for scholars from the region to participate in workshops organized by the EUI and CMR, including academic exchange opportunities for PhD candidates;
- provides forums for national and international experts to interact with policymakers and other stakeholders in the countries concerned.

Results of the above activities are made available for public consultation through the website of the project: http://www.carim-east.eu/

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Abstract

The objective of this critical and methodological survey is economic research on migration issues among European and more generally among Anglo-Saxon scholars and to focus on the themes which could be usefully expanded upon in analyses of migration from and to the CIS countries.

The survey covers in a very unbalanced way the three main migration research areas: the migration choice, which attempt to answer the question: why people move**;** the effects of immigration in the country of destination and its implication for migration policies and the effect of emigration for the country of origin the most challenging and least developed of these three.

For all areas the main economic approaches and the variables use, the methodoly and the main results are reported. More attention is devoted to the research field which seems most relevant for the CIS countries and the methodological focus is meaning to make the text as understandable as possible to all social scientists, not only to a small circle of econometric addicted.

Introduction and aim of the survey

The objective of this critical and methodological survey is economic research on migration issues among European and more generally among Anglo-Saxon scholars nd to focus on the themes which could be usefully expanded upon in analyses of migration from and to the CIS countries.

This area has two poles of attractions Europe and Russia. While many themes are, already, covered by ample empirical research in Europe and the specification of the results by countries of origin provides answers to specific research questions applied to this area, much less is known about the other main destination and many subjects are relevant to sending country evolution and can be tackled only by analyzing simultaneously both migration outflows to Europe and to Russia or Azerbaijan..

Economic research can be subdivided into three main areas:

- Studies of the migration choice, attempting to answer the question: **why people move;**
- Studies on **the effects of immigration in the country of destination** and its implication for migration policies and
- Studies on **the effect of emigration for the country of origin** the most challenging and least developed of these three**.**

This brief note attempts to survey all these issue, necessarily though in a very unbalanced way: more attention is devoted to the research field which seems most relevant for the CIS countries and the methodological focus is meaning to make the text as understandable as possible to all social scientists, not only to a small circle of econometric addicted. For more details is however appropriate to refer directly the paper listed at the end in bibliographical form.

1. The migration choice.

Political issue

Is it possible to forecast migration and to control flows? The study of the forces which push and pull migration help us to understand future flows and the efficacy of policies in controlling them.

Policy to implement

In the destination countries a system of visa policies, amnesties and a system of recruitment of foreign labour can be introduced or improved , while in the sending countries there is the institutional system for constraining or favouring migration and the economic incentives .

1.1 Survey

i Research on the migratory choice started with the work of Sjaastad, (1962) and is part of the human capital theory, which interpreted migration as an **investment** by an individual who wants to maximise his/her income and, therefore, finds emigration advantageous because he/she earns an income differential net of the monetary and psychological costs of the transfer. The choice is an inter-temporal one in which the future flows of income which can be earned in the area of arrival and in the area of origin are compared.

1 $M = f(W_d - W_o)$ where f>0, M=1,0, and M = 1 if $W_d > W_o$ and M = 0 if $W_d < W_o$

$W_d = \int_0^t Y_d \, e^{-rt} \, dt - C$ **2**

$W_o = \int_0^t Y_o \, e^{-rt} \, dt$ **3**

Where *M* indicates the individual's decision to migrate, positive and nil ,*Wi = d,o* represents the flow of future incomes discounted for the present, *r* the discount rate and *Yi* is the income in the two areas and *C* the cost of migration.

This formulation of the choice to migrate suggests that the larger the differential is, the more probable the choice to migrate will be, and the longer the period during which the benefits can be enjoyed – that is to say, the younger the immigrant is the higher the expected income will be and the more probable the choice to migrate.

i.i. Already in the seminal study by Todaro (1969) the worker finds himself/herself exposed to the risk of being unemployed in the destination area and, therefore, the choice is made of comparing the income earned in the area of departure with the *expected income* in the receiving area[1]. In Todaro's study, the probability of finding work is linked to the rate of unemployment. Therefore, the expected income in the receiving area (EW_d) depends on the probability (P_1) of getting a job at wage Y_d and the probability ($1\text{-}P_1$) of receiving unemployment benefits Y_{du} (which could be equal to zero) - equation 4. While in the departure country the expected wage (*EWo*) is given by the probability P_2 of getting a job at wage *Yo* (equation 5), generally considered to be equal to one, namely that the potential migrant can get a job at home.

$$EWd = \int_o^t [\, P_1 Yd + (1 - P_1) Ydu] \, e^{-rt} \, dt \qquad \mathbf{4}$$

$$EWo = \int_o^t P_2 Yo \, e^{-rt} \, dt \qquad \mathbf{5}$$

If it is possible to enter the receiving country illegally, the valuation of the expected wage in the receiving country should be extended with the introduction of the possibility of being deported (equal to one in the case of legal immigrants and with a value of less than one in the case of illegal immigrants).

The analytical differences in the models have important implications for economic policy. In the first case the optimum policy to slow down migration would be to reduce the difference in income between the departure area and the receiving area. In the second case an increase in the level of employment would increase the probability of getting a job in the area of potential emigration and so raise the flow of immigrants. However, only a limited number of immigrants will manage to get a job and the rest will join the ranks of the unemployed, influencing again the expected wage. In this second model it is not the equal wage level but the equal expected wage which slows down migration

Summarising

Central to this version of the neo-classical model of choice to migrate is the dynamics of the labour market: wage and employment levels determine the dynamics of the expected gain that the migrant can obtain from migration.

Migration will be more probable among individuals whose human capital guarantees a higher income and a higher probability of getting a job abroad.

The probability of migration will also be higher if the individual's characteristics, the social and technological conditions reduce the costs of moving and so increase net gain.

[1] In Todaro's 1969 version there is only the first part of 4: unemployment benefits do not exist Ydu = 0 and P2 = 1.

At an aggregate level migration flows are the sum of different individual choices which depend exclusively on the trend of the labour market.

A policy to slow down migration can intervene only at the level of expected wages, that is to say upon the wages earned which are discounted by the probability of getting a job and by the probability of being deported.

They also include long-term policies in the departure country, which can increase production and, therefore, employment and wages and, in this way, expected wages rise so that wage differentials can be reduced and so that, in turn, migration is discouraged.

iii. A difference between expected wages in the receiving country and certain income in the departure country could, however, be sufficient to slow down migration in the case of individuals averse to risk. The empirical literature suggests a positive relation between individuals who emigrate and their propensity to risk.

The more the worker is willing to risk, that is to say, he has a convex utility curve with respect to wealth, the more probable it is that he/she will emigrate even if the difference in income is limited (Langley, 1974, Hart, 1975) [3].

An interesting development with the introduction of risk into the utility function was put forward by Oded Stark (and Katz E 1986). Here the co-ordinates of the choice to migrate were changed radically and for this reason the authors called the theory: "The New Economics of Labour Migration" [4]. In this case it is not the individual but the family who decides upon migration and it is a strategy to diversify the portfolio of income sources and to insure oneself against the risks of poor agricultural income.[5] Therefore, it is not the propensity to take risks which favours the choice to migrate, but risk aversion, which is joined to a particular return function of wealth (for example, very high for very low levels of income) which can enable a family to enjoy the fruits of modernising agricultural production, which would otherwise not be possible.

The development of research on the migration choice is continuous and involves both the estimates and the modelling of the migration choice.

We will mention only three research directions:

There is, first, a deeper analysis of the role played by the level of income in the sending country in the migration choice. For a given income differential between sending and destination countries the income in the sending country plays an additional and autonomous role by limiting migration with a low level of income acting as a budget constraint which reduces the possibility of financing migration. However, for high level income, instead, the income effect dominates and even if there is still an incentive to migrate the workers are well off and do not move (Faini, Venturini 2011);

[3] Langley (1974) in his theoretical work introduces a utility function with aversion to risk [U=a-cexp-bD, where b identifies the aversion to risk and a, b, c are parameters c,b>o and a>=<0 and D represents the net return of migration in the period considered] which, however, is not estimated in empirical work. Hart (1975) does not elaborate a model with aversion to risk he limits himself to emphasizing its relevance.

[4] The New Economics of Labour Migration in addition to covering the theme in which the choice is familiar and is made with the idea of diversifying one's portfolio. There are two other interpretations: asymmetric information and relative deprivation. The article that summarises these three themes and has the title which was later given to this theory is by Stark and Bloom 1985 American Economic Review

[5] In a very interesting study, Daveri and Faini (1997) analyse the family's choice to spread risk by sending its members to different countries. Assuming that the correlation between income in various countries is not nil, concave family mobility costs and idiosyncratic preferences of destination theoretically explain and check empirically two contradictions of the phenomenon in the Italian case: spatial agglomeration and territorial spread.

A, second, direction is a more specific analysis of the effects of policies implemented by destination countries on the migration flows by A.M.Mayda (2010) who has built a dataset on migration policies;

Third, a more accurate description and test of the migration decision, which is affected not only by the attractiveness of a single destination but also by other potential destinations and that takes them into account reduces the effect of income *per capita* in the main destination (Hortega Moraga Bertoli 2011).

1.2 Methodology

The data on migration flows are in general collected in the country of destination and the dependent variable is the net migration rate or the gross migration rate. The first one is obtained as the difference between two periods' stock of migrants and is the net of possible return, while the second is a better proxy of push pressure but presents as well possible measurement problems.

The empirical tests are, in general, done at aggregate level using bilateral flows i.e. US-Mexico, Germany-Turkey or, instead, they employ the dataset of a country of destination i.e. Germany (Brueker, Silverstov, 2006), Spain (Bertoli, Hoertega, 2011) and analyse the inflows from many different countries of origin or, alternatively, choose a country of origin and analyse the destinations (Faini, Venturini, 2011). In all cases a relatively long time series is used.

Few papers use micro-data which are not available in time series and so they test special hypotheses, such as, for instance, risk aversion.

The labour market variables are in general the unemployment rate or the employment growth rate and income *per capita* is used, instead of wages, as the attractor in the destination country because the choice of the specific level of remuneration is unknown before migration.

As a proxy of the migration network the lagged dependent variable or the stock of migrants are used. They are not exactly the best measure but the proxy evolution of the phenomenon. The first one, however, is more efficient in a dynamic setting where the phenomenon is affected by previous values.

1.3 Concluding Comments and Results

Summing up the results of empirical research here is simply impossible. However, some important conclusions can be derived from the empirical research that has been made to date:

First, migration stops before the reduction in the income differential: in Europe it stopped when it was close to 30%.

Second, the poorest are restrained in migration because of the excessive cost of it..

Third, policies affect migration decisions by changing the scenario in which the decisions are taken, but the possibility of working in the black market reduce governments' ability to control at the same time the front door – legal entrance- and the back door- irregular jobs and entrance.

Fourth, forecasting short run migration flows is not simple, while long run movements are more easily anticipated.

2. The effects of migration in the destination country

The effect of migration in the destination country is a well researched field because the availability of data produced by the national statistical offices and by administrative sources allows better opportunities for inquiry. Of course, the effect on immigration depends upon the characteristics of the migrant flows: are they permanent migrants or temporary migrants? Are they labour migrants or members of a migrant family being reunified in the destination country? Are they refugees? Or are

they students? Are they skilled or otherwise? There are, of course, many other characteristics which describe the type of migrant population which is also the result of the migration policy adopted in the destination countries and the migration pressure of the sending one. Any study upon the effects of migration in the destination country starts with a long descriptive section which itself explains many of the consequences that the phenomena produce. The empirical research done by other disciplines by the demographers or social scientists, in general, arrive at the same conclusion, but the advantage of the economic approach is in the use of a large dataset which allows a more accurate evaluation of the impact of the immigration and allows controls that are not available in descriptive approaches.

This topic can be broken down into several main issues:

1. the effect of immigration on the **aggregate economy** which, for an economist, implies, above all, the effect on economic growth, and thus the effect on the growth of GNP and on the GNP *per capita* which varies according to the human capital of the migrants and the employment sector;
2. another crucial subject is the effect of immigrants on the destination **labour market: do** migrants **complement** native workers or do they **displace** them? This is, naturally, a very sensitive issue which conditions migration policy because the natives' interests should not be damaged by immigration and if these interests are damaged a revision in policy should follow.
3. the use by immigrants of the **welfare state**, the benefits that the state provides to the citizens, is also analyzed. If migrants use, for instance, unemployment benefits, health services, or social services more than the natives a redistribution between who pays and who receives is taking place and this begs again the question of whether an appropriate migration policy is in place.
4. the **economic and social assimilation** of foreign nationals is the last field of research. Economic assimilation is, in general, a prerequisite of social assimilation and if migrants assimilate into the labour market they also use the unemployment benefits and social services less thus they benefit the country of destination rather than costing it. This type of analysis implies a vision of permanent immigration in the destination country and also a dataset panel which follows natives and migrants during their working life which are probably not available in the CIS countries.

2.1 The effect of immigrants at the aggregate economic level

Political Issue:

This is the "big" policy question. Is migration positive for the country or not? The answer sums up the specific questions asked in the points above plus the direct and indirect effect in the goods and production markets.

Policies to implement:

Selective migration policy or specific policies to contrast the negative effects.

Survey

This is the most important field to evaluate a migration policy. However, limited research is available. There is much empirical evidence that immigration increases aggregate GNP in the destination country, but this is not enough to derive a positive conclusion.

The idea that a foreign labour force can become an engine for economic growth is based on studies carried out in the 1950s and 1960s. It is enough here to recall the famous work by Lewis (1954), where migration from low-wage sectors to high-wage sectors favoured the growth of output, through

higher profits. Kindelberger (1967) interpreted economic growth after the war as being the fruit of an infinite supply of immigrants in a situation of over-employment. Vera Lutz (1961) also thought that economic growth derived from the transfer of productive resources from less productive sectors to more productive areas.

The issue has always been seen and analyzed in the context of links between population and economic growth and, therefore, the impact of population on the rate of accumulation and technological progress.

The researches quoted by Tapinos and de Rugy (1993) regarding the US, Australia and Canada[1] provide positive results but they are of a very limited number and are attributed exclusively to economies of scale and market expansion.

The debate is often based **on socio-political arguments** which are difficult to test as, for example, in the study of Simon (1989) who argues that one of the many positive aspects of scattered migration, is the positive impact a multi-ethnic society has on technological innovation.

The studies which analyze the impact of immigration on *per-capita* income, adopt it as the only measure of the well-being of the native population. This does not necessarily imply a fall in income for the natives, if the foreign nationals have a *per-capita* income lower than the natives.

Up to the mid-1970s in Europe there was a general consensus regarding the effect of immigration on economic growth in the receiving countries (Garson, Tapinos, 1981). But subsequent empirical studies have raised a number of doubts. The case of Switzerland, a country that has always exercised strict control over immigration, reveals that the output elasticity of the labour force is lower for foreign nationals (0.10) than for natives (0.46) (Butare, Favarger 1995) which means that foreign nationals have a positive impact on the growth of income but not on *per-capita* income.

In order to discuss the impact of immigration clearly it is necessary to bear in mind the links which there are with the productive system and the level of human capital among foreign workers.

Few studies manage to deal with these two aspects together, Solow's growth model is elaborated in a version proposed by Lucas (1988) which explicitly takes into account the growth of human capital, and makes it possible to analyze the impact of immigration on the growth rate of the receiving country.

The conclusions reached in the literature (Dolado, Ichino, Goria 1994) converge in identifying a positive effect for the growth of *per-capita* income in the receiving country, if the foreign national's human capital is higher than the native's, and *vice versa* if it is lower. This conclusion explains – among many other more specific reasons – the demand of skilled migrants from the destination countries.

The economy has a production function in which human capital is inserted explicitly[2] where Y represents the level of output, *H*, human capital, *L*, total working population (natives plus net immigrants *Lo +M*) whose productivity increases at rate *g*.

$$Y = H^{a}(L\, e^{gt})^{1-a} \qquad 0 < a < 1$$

1

The total number of effective workers increases because the population, made up of natives and net immigrants increases, and also because of the technological growth incorporated in that population.
Human capital in turn increases in relation to the share of output *(s)* invested, plus the share (*b*) of the existing stock of human capital introduced by each immigrant and it is reduced by a rate of depreciation (*d)*

[1] See also the work of Swan *et al*. (1991) and Simon (1989).

[2] Solow's model, augmented by immigration, has been used: see also Mankiw, Romer and Weil (1992) .

$$\dot{H} = sY - dH + bM\frac{H}{L} = sY - dH + mbH \qquad where \quad m = M/L \qquad 2$$

$$y = h^a = \left(\frac{H}{L}\right)^a = \left(\frac{H_o + Mb\frac{H_o}{L_o}}{L_o + M}\right)^a \qquad 3$$

Using small letters for the units of labour as follows

$$y = h^a ; y = \frac{Y}{L e^{gt}} ; h = \frac{H}{L e^{gt}} \qquad 4$$

thus the effect of net immigration will be positive or negative if *b*, the share of human capital brought by immigrants, is $\gtreqless 1$.

$$\delta y/\delta M = \frac{a h^{a-1}}{L^2} H_o (b-1) \qquad > o < 0 \qquad 5$$

From this it follows that for a given value of *b*, more immigration will make the current level of *per-capita* income increase (or decrease) if *b* is more (or less) than 1.

The authors estimate the equilibrium value of the stationary state of the parameters for a sample of 23 OECD countries, from 1960 to 1985 and get an estimated value for b of between 1.41 and 0.72, which is very similar to the values obtained for some European countries, with the expected effect of a fall in *per-capita* income. As the immigration flow was exogenous and using the parameters of the model, the authors estimated what effect immigration had on growth. An increase of one *per* thousand in the net migratory flow reduces, according to the model, the equilibrium *per-capita* income in the stationary state by 1.5% and current income by 0.04%. Such an outcome is, however, less than the negative impact of population growth, on the growth of *per-capita* GNP.

The theoretical model used to analyze the impact of immigration on a country's growth can be extended to analyze the impact of emigration on a country of origin and thus it is possible to study how population movements lead to convergence. The theory is that growth in the departure area is favoured by the emigration of workers with few skills, while growth in the area of immigration is slowed down by workers with few skills; bringing the rate of growth and the rate of *per-capita* income in the two areas into line

An interesting paper on this topic was written by Taylor and Williamson (1994), a paper which assesses the role played by immigration in the US from 1870 to 1913. The authors specifically ask whether immigration made the incomes of the countries of immigration converge with the countries of emigration.

Another particularly interesting paper which treats the topic only in theoretical terms, was written by Davies and Wooton (1992). The authors analyze what effect the international migration of workers has on the distribution of income in the departure country and in the receiving country. The traditional assumption that the migration of unskilled individuals reduces the difference in income in the departure country and increases it in the receiving country is overturned.

As in the case of the migration of skilled workers, the assumption that the variance of the distribution of income in the receiving country is reduced and that it is increased in the departure country is questioned. The authors show that the migration of unskilled workers can have a two-fold effect, while the movement of skilled workers can reduce inequalities in income in the departure country, differences can increase in the receiving country.

At the European level the empirical analyses of Ortega Peri (2009) and Peri in Bruecker *et al.* (2011) find a positive effect for immigration in the growth of employment and capital and no relevant effect on the Total Factor Productivity, namely innovation. Thus total immigration seems not to reduce

capital intensity while, contrary to what might be expected, high skill (tertiary educated) immigration has a positive, though relatively small effect on employment growth and capital growth but it has no significant effect on aggregate innovation[3].

The economy has an aggregate production function where GDP (Y) is produced using the labour input (L) – which is determined by hours worked and employment – and services of physical capital (K) and a factor A of total factor productivity in country of destination d in time t, using a Cobb Douglas production function it is .

$Y_{dt} = A_{dt} K_{dt}^{a} L_{dt}^{1-a}$ $0<a<1$

$$\frac{\Delta Y_{dt}}{Y_{dt}} = \frac{\Delta A_{dt}}{A_{dt}} + \alpha \frac{\Delta K_{dt}}{K_{dt}} + (1-\alpha) \frac{\Delta L_{dt}}{L_{dt}}$$

Sarris and Zografakis (1999) and Feri, Gomez-Plana and Martin (2000) analyzing respectively Greece and Spain adopted a Computable General Economic Equilibrium model, using the most recent data. They consider the effect of immigration on the well-being (income) of the population and find that families maintained by unskilled workers become poorer.

The positive effect of highly-skilled migrants on the growth of destination countries has also helped clarify the effect of the emigration of the highly-skilled on wages in the sending country. And Docquier, Ozden and Peri (2010) find that emigration reduce wages and increase wage inequality in OCDE countries, while immigration increases wages and reduces the wage inequality of non-movers, suggesting that European countries which experience large outflows of highly-skilled should worries more about this than about the immigration of immigrants who are, for the most part, lower skilled.

Conclusion

At the aggregate level the effect of migration on the economy is positive, and evidence of the negative effect of low-skilled migration on innovation and, thus, on labour productivity are presently limited or, at least, limited to specific sectors. Migrants expand production and complement capital. More delicate is the role that migrants play in the labour market which is the subject of the next paragraphs.

2.2 The effect of immigrants on the destination labour market: Are migrants a complement or competition for native workers?

Political issues:

Immigrants should not damage native workers by reducing their wage, either their income or/and by replacing the natives in the job. This result will create conflict, increase the number of unemployed dependent on the welfare state and this form of immigration is not economically and socially viable.

Policies to implement:

Migration policy should be selective to reduce labour market competition which damages native workers and, if this is not possible, passive labour market policies, i.e. unemployment benefits, should alleviate any negative effects on employment and active labour market policies should retrain native workers for future job offers.

[3] This study uses a traditional production function with both labour and capital and technological innovation which employs the Solow residual

Main issue

The policy debate frequently is not very clear. The lack of clarity comes about because there is a distributive problem that is difficult to solve for policy makers. It is not clear if the policy issue is the **average native wage** (and employment) or only the wage of a single categories of workers, let us say **blue collar workers.**
Immigrant workers are defined as being **competitive** or **substitutes** when they have a negative effect on wages and/or native employment levels and they are defined as being complementary when the effect is positive and competitive when it is negative.

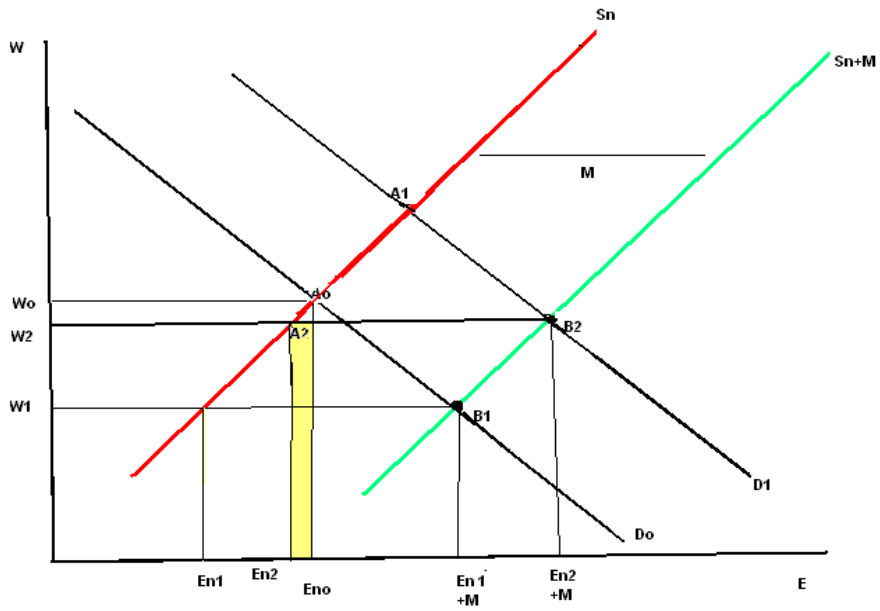
a. One sector and one type of labour

The simple model has colonized all the debate and has influenced the policy debate.

If the migrants are only of one type let us say unskilled and the native are all unskilled the results is very easy. The increase in labour supply will produce a decline in the equilibrium wage of the unskilled labour market (and this market alone) in the short run, and if the labour supply is not inelastic also a reduction in native employment see Fig.1. Over the medium- or long-run firms' profits will be reinvested with an expansion of demand (given CESS technology) and a **flexible capital market** and demand will increase along with wages. Wages can return to the pre-migration equilibrium.

Figure 1 Increase in labour supply with an elastic native labour supply

Sn native labour supply, Ao and Eno and Wo equilibrium employment and wage before migration, B1equilibrium employment after migration W1 wage and En1native employment if demand does not move; if the demand changes a possible equilibrium could be B2 wage W2 and native employment En2, the difference between Eno and En2 and Wo and W2 and its displacement. .



b. One sector and two types of native labour

However, if the labour market in the destination country is not made up of just one type of labour but let us imagine two types, skilled and unskilled, the story can be different in the short run too.

Let us, for the moment, imagine that the immigrants are again only unskilled, what happens is a change in the composition of the two groups. The labour supply of unskilled workers increases and their wages, consequently, decrease, while the labour supply of the skilled do not increase, and as a complement to the unskilled the demand for skilled workers increase and their wage with it.

In the **short run the average wage** can remain the same because there are two different forces at work: decline for the unskilled wage and a raise for the skilled wage-earners.

The hypothesis that migrants are all unskilled should be replaced with a different mix of the two types of skills which alter the previous wage equilibrium with similar results.

c. Two sectors with a different mix

If there **are two sectors**: one where both the unskilled and skilled work and one where only skilled workers work alone, what happens over the long run will depend on the flexibility of the capital market. In the long run the firm can decide to disinvest in the skilled sector and invest more in the unskilled sector, now more rewarding and, in this way, reduce the demand for the skilled workers and their wage.

Another interesting case, especially relevant to Southern European, is described in an article by Dell'Aringa and Neri (1987) where competition is expressed through the movement of capital from the official sector to the informal sector where migrants are concentrated.

d. Klaus Zimmermann in a series of theoretical studies – with Schmidt, Stilz (1994), alone (1995) and with Bauer (1997)[4] – developed a working model of the labour market that assumes that **monopolistic trade union** supply is made up of native skilled workers (*S°)* and unskilled workers (*N°),* the latter being homogeneous with the foreign nationals (*M*), and a quota of immigrants fixed by the Government. This model has, however, only one sector and the results depend on the weight the trade union puts on the skilled wage. The problem of rigidities in the labour market is analyzed by Brueker and Jahn (2011)[5] who consider a wage setting where employers and trade unions agree on the wage level and where unemployment increases the trade unions reduce wage demand. The empirical version of this model applied to the German case finds that the wage flexibility varies a great deal according to the type of labour and that it is much larger for the young than for workers with a university degree. An increase in the immigrants by 1% decreases aggregate wage by 0.18% over the short-term (the long-term effect is zero), the average unemployment rate increases by 0.32% but in the long run by only 0.09% with, however, a different composition of migrants with younger workers and highly-educated workers which will be more beneficial.

As was mentioned in the introduction the debate is full of ideas derived from the simplest model, while to understand the effects of immigration it is crucial to understand the flexibility of capital markets, the dimensions of the country – small means a price taker, big a price maker, the flexibility of the equilibrium wage in the labour market and the technology mix available, which conditions the option available to firms.

[4] Bauer and Zimmermann in their study dated 1997 used a different specification of the trade union's utility function which is expressed as a function of skilled and unskilled workers' wages. The results are, however, similar to those found in the neo-classical model. In the case of unskilled worker immigrants the effect on wages is negative and it is the same for employment. Instead, in the case of skilled immigrants the effect on unskilled wages is uncertain but for reasonable values of elasticity a negative sign prevails, while the effect on the employment of unskilled workers is positive.

[5] Se also Brucker 2011 The Labor Market Challenge. Does International Migration Challenge Labor Markets in Host Countries? A Critical Review of the Recent and Traditional Literature http://cadmus.eui.eu/handle/1814/19820

Empirical debate

The literature debate is concentrated mainly on the best strategy to get a correct estimate of the effect of immigrants on the native labour market.

Identification assumption: how to build a counter factual case where we can compare the wage change when immigration takes place is the issue here.

a. Cross spatial approach

A widely-adopted solution has been to slice the country of the destination labour market into areas or sectors, or both areas and sectors adding to the traditional wage equation the share of immigrant input in the local labour market.

Wir= aXi+bYr+**FS**r+uir
W wage of the individual I in the region r, X individual characteristics of individual I, Y characteristics of the area r, FSr share of migrants at regional level r, u errors.

The idea is that the larger the share of immigrants in the local labour market (r) the larger the increase in labour supply and the larger the effect on the native wage and/or employment which could be negative or positive.

Two problems arise:

The first is related to the **endogeneity of the migrant location**, migrants go where the wages are growing and in this way reduce the competitive effect.

The traditional solution is to use previous migration inflows which are not related to contingent wage growth, but which are good predictors of settlement (migratory chain) (Altolji and Card 1991).

The second one is related to the **internal mobility of natives**. Regional labour markets are not closed markets and native workers can move from one state to another according to the wage differential, and by doing so they reduce the excess supply of labour in one area and increase the labour supply in another and by diffusing the effect to other areas they question the result of the estimates. Filer in his 1992 article found important evidence for this and later on also Borjas(2003) and Hatton and Tani (2005), while Card (2001, and 2005) found none. This issue is very important in big destination countries where the inter-regional mobility of natives can be notable.

The problem, however, can also be seen in a different way. Bruecker, Fachin and Venturini (2011) find in the Italian case that the complementary effect of foreign migration on native wages was not the result of native internal mobility but, on the contrary, it was obtained through the reduction of internal migration inducing foreign inflows in the more promising destination areas.

b. Cross skill cell approach

To solve these problems George Borjas (2003) suggested slicing the labour market by skill cell and he used experience-education cells at the national level. In this way internal migration was no longer an issue, nor, indeed, was the location of immigrants.

This approach produces, however, additional problems because it is based on the hypothesis that native and immigrants are **perfect substitutes** within predefined skill cells which is not, of course, always the case.

Ottaviano Peri (2006) has introduced, employing a similar approach, the hypothesis **of imperfect substitution** between native and foreign nationals in the same skill cell in the US case as Manacorda, Manning and Wadsworth (2006) did in the British one, but the skill cell pre-allocation remains.

Only Dustmann, Frattini and Preston (2008) avoid the explicit pre-allocation of immigrants to particular skill groups based on their observable characteristics, something they avoid by slicing the labour market into percentiles according to wage distribution.

c. Complementarity between different skill and sectors

The present analysis is more focussed on the effect of a worker of a given skill on workers of the same skill level than the large complementarity between skills and sectors and thus it undervalues the positive effect of immigration on native employment. An interesting exception is the analysis of foreign work in the family sector which favours native woman employment in more skilled occupations in other sectors (Cortes Tessada, Barozzi Mocetti[6]).

d. Results

The results are, in general, in Europe very similar. No strong competition emerges, and competition is limited to the specific occupation where the migrants are concentrated, while a complementarity prevails with positive wages increases for the skilled.

If competition is visible it is more observable in the employment market.

[6] Cortes, Tessada, 2011, Low Skilled Immigration and the Labor Supply of Highly Educated Woman, Applied Economics; Barone, Mocetti, 2011, With a Little Help from Abroad, Labour Economics, 18, 664-675..

Those most affected in wage and employment terms by new immigrants are previous migrants.

Conclusion

Even if this is a very important issue and even if empirical research is very interesting and accurate, political debate is not based upon it, because the benefits of the employers (profits) and of the skilled workers divert the attention from the possible displacement of some unskilled workers.

The only very popular case was the competition in the construction sector in Germany where the rise in unemployment among construction workers was imputed to Portuguese companies which reconstructed Berlin by using the cheaper Portuguese labour who were more convenient for the firms because they received Portuguese social security contributions which were lower. The German Construction trade unions went on strike and legislation was changed so that foreign companies working in Germany were obliged to apply the "prevailing German contract regulation".

Empirical research is, in addition, mainly focused upon employment in the industrial sector, while there are other important sectors like, for instances, family services and the professions which hold a degree of irregularity like the construction and restaurant sectors – which are understudied which, instead, might reveal unexpected results and that might change the aggregate picture.

2.3 The effect of immigrants on the welfare state

Political issues:

European countries (EU15) have reached an agreement on the benefits that workers and in general citizens receive from the state - paid by the general taxation system or by a special contribution: the welfare state. In some countries the welfare state is more generous because it is the result of a compromise between different categories of needs which have been accepted as rights. The use of welfare by non citizens or by new citizen, particularly when this use differs from national use, can result in unintended redistributive policies. Thus even if migrants are not competitive in the labour market, they might be costly for the destination state because they use the welfare state more than natives or more than similar natives.

If it is so, natives finance, through the general fiscal system, the welfare services received by foreign nationals and this creates distributive conflicts, reducing the total migration surplus.

Policies to implement:

5. Restrict welfare eligibility;
6. Revise immigration policies by selecting migrants by the characteristics (in general skill terms) to reduce welfare costs;
7. Implement policies which favour the assimilation of welfare by foreign nationals, or better which favour the non-taking of benefits by eligible migrants;
8. Implement policies to prevent immigrants from entering the welfare state help them to avoid state dependency
9. And, last but not least, a revision of welfare for both natives and foreign nationals.

Main Issues

The migration surplus produced by the arrival of foreign labour will be eroded by the cost of migrants levied on the general income tax system.

In the long run legal migrants will contribute to the functioning of a "pay as you go pension system" with an ageing population, but, in the short term, the question is whether the foreign use of the welfare state is larger than the natives' use.

We sum up the main evidence which can be divided into 4 research lines:

1. Does welfare attract migration – a "magnet" in Borjas's wording – by spurring the move and selecting the destination?
2. What is the average use of the welfare by natives and foreign nationals?
3. What is the difference between the use of welfare of individuals with similar characteristics?
4. and last which uses a comparative approach and distinguishes by type of benefits.

Survey

i. Welfare Magnet

The generosity of the welfare state was supposed to be a magnet attracting foreign nationals to certain areas. While Borjas (1999) for the US and Bruecker *et al*. (2002) by using the EURO Panel (2001-2004) did not find any evidence of this, De Giorgi and Pelizzari (2006) using again the EURO Panel found a propensity to settle where the welfare state was more generous. However, the wage effect plays, in their study, a much larger role in attracting migrants, ten times larger than welfare benefits.

More recently Razin Whaba (2011) found that the presence of welfare provision has played an important role in attracting migrants from developed countries more than from developing ones because the larger gains in income differential were offsetting welfare benefits.

The two pieces of evidence do not necessarily provide a conflicting picture. On the contrary they suggest that the welfare state plays an important role in the emigration decision when some minimum condition of education, income and institution are satisfied, and that welfare can be an attractor especially for emigration from Eastern countries where welfare provisions were part of the services that the State granted with no costs.

ii. On the aggregate migrants make more use of welfare

Empirical research has shown that migrants use welfare more than natives and below we report some results which provide the dimensions of the larger costs incurred by the destination country, in terms of social spending.

In Germany Flick (1999) found that migrants were 3.7% more likely than natives to be in receipt of benefits.

In Sweden Hansen and Lofstrom (2009) reported that, in the mid-1990s, the expenditure on social assistance for immigrants in Sweden equaled that for natives, but that migrants were only 10% of the total population.

Also in United Kingdom Barrett and McCarthy (2008) showed that 19% of immigrants but only 12% of natives receive welfare payments.

Only Ireland is an outlier here. Barrett and McCarthy (2007) showed a lower use of welfare among foreign nationals, essentially because of higher skill concentrations among the foreign population.

The analysis of the effect of immigration on the welfare of Southern European countries is complicated by illegal migration. Migrants frequently work **irregularly** but, however, they receive a minimum of health and social assistance provided by the social structure paid by public finance, and, in addition, the status of illegal immigrants in these countries has been frequently temporary, with periodical amnesties, thus, at the aggregate level, the picture is not clear.

iii. Conditional on migrant characteristics: do migrants use welfare more?

The results of the empirical research on this issue is less clear.

In the **US** Borjas and Hilton (1996) showed that if only cash benefits are considered, the difference between native and migrants is very small in relation to welfare, while if non-cash benefits are also considered immigrants are shown to draw more heavily on benefits than natives.

Looking at Europe **Sweden** is particularly interesting because its welfare system is the most generous. Hansen and Lofstrom (2009) and Andrén (2007) by using administrative longitudinal data discovered that migrants use welfare more intensely than natives, but like natives, immigrants have less and less welfare – that is the longer they stay on welfare the less they use welfare benefits – even if the reduction comes at a lower pace than natives[7].

By looking at different groups of immigrants, these scholars found that refugees exhibit a greater degree of state dependence while labour migrants are similar, generally speaking, to natives.

Dropping out of the labour force is a better predictor of welfare receipt for a migrant than for a native. But entering welfare creates a state dependency three times lager for immigrants than for natives, thus it is very important to adopt policies which reduce the onset of welfare more than policies which favour welfare exit[8].

In **Germany** Castronovo et al.(2001) found that migrants, given their income and household structure, are more likely to be **eligible for welfare benefits**, but even if they are more likely to be eligible they do not **take up welfare benefits** more than equivalent natives. Namely, immigrant characteristics explain their intense use of welfare, as also Riphan (2004) points out in her analyses where she finds, as in Sweden, that dropping out of the labour market is a much stronger predictor of welfare receipt among immigrants relative to natives. Other researches present similar results e.g. Fertig and Schmidt (2001) and Bird *et al.(*2001) show that immigrants are, fundamentally, more welfare dependent because their individual characteristics lower education, larger families, lower age of the household head, and their lower labour-market performance relative to natives increase their use of welfare.

In the **United Kingdom** migrants have a more intensive use of the welfare according to the analyses of Barrett and McCarty (2008). Even after controlling for individual characteristics being an immigrant increases the probability of welfare by 4%, and also looking at education level, migrants with less education are more likely to be on welfare by 9%[9].

The recent work of **Pellizzari** (2011) in Italy presents a different pattern. By analyzing the welfare granted at the local level by regional government, which includes family, education and health benefits, he found that migrants use the welfare services more than similar natives. Likewise **Zorlu** (2011) in the Netherlands found that migrants, even after controlling for similar characteristics, use the welfare more.

An additional line of research stresses the importance of social capital which transits through the community in the destination area, that is assimilation to the average behaviour of the community of reference (Borjas and Hilton 1996[10], Hao and Kawano 2001).

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[7] Contrary to Borjas and Trejo (1991) who showed that immigrants assimilate into welfare.

[8] For Norway see Bratsberg et al (2010) and Denmark Nannestad (2004).

[9] In Demank Wadensjo and Ory (2002) found that migrants remain net-beneficiaries of welfare. Assimilation out of welfare exist, but it is slower than for natives. In Norway there is similar participation in welfare but immigrants have a higher number of children thus their payments were inflated accordingly.

[10] In the 1999 paper Borjas together with Hilton using the Survey of Income Programme Participation (SIPP) shows greater differences between groups of immigrants in their use of welfare programmes. This is, in part, due to the information and the use of such programmes being filtered through the reference community.

iv. Comparative approach to the welfare use by type of benefits

A research carried out by two teams, one European and one American tried to come to some conclusions on immigration and welfare (Boeri, McCornick and Hanson eds 2002). For Europe case they used the information of the European Household panel to single out foreign national's welfare dependency. Unfortunately the data did not cover all issues, but they were able to test whether non EU-immigrants have higher predictable dependency than EU natives as far as unemployment and family benefits in 10 European countries. And the results were positive in all the countries with stronger dependency *ratio*, for instance, for family benefits in the Netherlands, in the United Kingdom, in France and in Austria. Even if the dataset is unique, it is not sufficient to detect welfare shopping by the immigrants at the European level and for the Southern European countries the recent waves of immigrants are probably not sufficiently sampled in the dataset. Thus no final conclusion can be drawn from these cases.

The comparison between national countries is difficult because welfare systems have different terms of eligibility and different characteristics. Boeri in Bruecker (2010)proposes in his research on Labour "Mobility within the EU in the context of enlargement and the functioning of the transitional arrangements" by the European Integration Consortium (2008), a distinction between contributory benefits and non-contributory benefits. The first are designed to cover against the risks of unemployment, longevity (pension), sickness, disability and survivor's pension. The second is household-related and includes housing and family allowances as well as transfers targeted specifically to groups with higher risks of social exclusion. The dataset used is the European Survey on Income and Living Conditions (EU-SILC) between 2004-2006. This dataset has some limitations in the possibility of distinguishing the area of origin of migrants which are grouped in EU25 and third countries (the usual distinction employed in UK English and non-English speaking is impractical)l and in the sampling, for instance, the extra EU25 household sampled in the Netherlands are 10, 11 in Poland, while 361 in Luxembourg, 689 in Iceland, more than in the UK 550, Sweden 217, Belgium 336 and also the citizens' sampling is strange 7564 in Iceland, while in Spain 907, in Germany 1477, in France 2458. Thus a selection is needed and countries coefficients need to be made with a lot of care.

As expected migrants are over represented in the second group of non-contributory benefits and under represented in the first example of contributory benefits. The under representation in terms of contributory benefits is, however, driven by the lower amount of pensions that migrants receive or because they left before the minimum vesting period that the pension system in the destination country require (more important), or because of some limit in the portability of the pension rights (less important) or even because they are still young and, at the moment, they are net fiscal contributors.

Also considering the net fiscal position, namely the difference between taxes and mandatory social security contributions and transfers received by households and for a subsample there was the expected result, that migrants contribute less to the tax revenue and social security than natives.

This is imputable to the lower wage, lower tenure on the job etc. and also to more fragile employment[11].

Barett and Maitre (2010) with the same dataset (EU-SILC) do not find a big difference between the use of welfare benefits by foreign nationals and natives. Giulietti *et al* (2011) focusing only on the unemployment benefits that migrants receive find that there is no differential use by citizens.

Straubhaar and Weber (1994) carried out a review of the empirical results of studies of costs/taxes, benefits/transfers made by the state to foreign nationals and their conclusion was that immigration does not necessarily have a negative effect on public finances, in fact, in most cases it is neutral or doubtful, and, in some cases, it is positive. In addition Straubhaar and Weber (1994) tried to estimate what impact

[11] See also The integration of Migrants and its effects on the labour market, 2011, EMPL, European Parliament's Committee on Employment and Social Affairs, section 5, p.80

foreign nationals have on the Swiss fiscal system, using a special enquiry into consumption in 1990. They are able to include, on the income side, payments to the public budget in direct and indirect taxes and social payments, and contributions for the use of public goods and for club goods (that is to say, education, public health, protection of the environment etc.) and, on the expenditure side, direct transfers to firms and the use of public goods and club goods. The budget turns out to be largely positive for the Swiss government which received a net transfer for the family of about $1743 in the year under examination. Given the number of foreign resident families there is a net gain of about $464 million for the Swiss Government and the authors conclude that the optimum level of immigration has not been reached in that country, and that there is still the possibility of new flows.

This result can certainly be, in part, attributed to selective immigration policy which is such that the rate of unemployment among immigrants is higher than for natives, but only about 1% higher. And it would be interesting to know if it will remain relevant with new inflows.

Policy Conclusion

This issue is much discussed in political debates, probably, because the choice of more selective immigration policies or selective eligibility policies are of such interest to public opinion.

To sum up:

Welfare can be a component of the emigration decision, but it is not the main driver of the migration choice;

Migrants use, on average, the welfare state more than non migrants. However if they are compared with natives with similar characteristics the evidence is less clear – new regional datasets find again a larger use by the migrants of the welfare state.

The comparison among national studies is complex because national welfare states provide different services and have different eligibility criteria.

Comparative research by topic, e.g. unemployment benefits, show, however, no differences among natives and migrants. The different age composition of native and migrant communities is also problematic in a comparative analysis where contributors of today (mainly natives) receive benefits tomorrow.

This approach, nevertheless, relies upon the idea that migration is a permanent phenomenon, while in recent years many studies point to the importance of the return of migrants, and the frequency of returns. If the European Union spurs circular migration the theoretical and empirical debate on this issue will, of course, need to be revised.

2.4 Immigrant Wage and Employment Assimilation

Political issue

Economic assimilation is a prerequisite to social assimilation or integration for a foreign national for a peaceful life in the destination country. If migrants are economically assimilated they are less at risk of welfare costs.

Policies to implement.

Special integration policies like language courses, special training policies or selective migration policies to avoid workers with lower assimilation rates or, as in the case of refugees, special intervention to reduce welfare state dependency and to favour their labour market insertion..

a. Initial debate: the cross section analyses

The core of the human capital assimilation theory was built upon the American experience (Chiswick 1978, Borjas 1985, Oaxaca 1973) and was imported from gender literature into migration literature, with the underlying assumption that immigrants remain in the destination country at least until they retire. In this framework, foreign nationals under- (over-) assimilate if they earn less (more) than natives with the same characteristics after a number of years in the host country.

Barry Chiswick in his pioneering work in 1978, employed a cross section drawn from only one census, and identified over assimilation on the part of migrants, namely a negative coefficient of the difference between immigrant and native wages at the time of arrival – and a positive coefficient of the rate at which wages grow with respect to natives' wages, George Borjas in his 1985 research reached different conclusions. Using two censuses he showed how the different wages structures of two cohorts can be missed in a single cross sectional analysis, while a longitudinal analysis reveals "under" assimilation which can be attributed to the lower "quality" of the most recent cohorts.

Finally, La Londe-Topel (1992) reports similar results to those of Borjas ("under" assimilation of foreign nationals*)* but they attribute this not to the lower quality of foreign cohorts but to worse economic conditions in the receiving country at the time when the foreign national entered the labour market, offering his/her labour at a lower entry wage and having fewer career prospects. The debate is ongoing with new specifications and tests being introduced.

Using longitudinal data would simplify the problem because the error due to different qualities of cohorts would be eliminated. However, for America and for many other panels foreign nationals are under-sampled or not chosen in a random way and so it has become the custom to build cohorts using census data and this creates the problems of specification referred to here.

The debate is far from over. Daneshvary, Herzog, Hofler, and Schlottmann (1992), for example, showed how investment in knowledge and job-seeking increased the wage that the worker managed to get and how it varies from one ethnic group to another. Chiswick (1992) showed how important the knowledge of written English was for wage assimilation. In the case of Canada, Baker and Benjamin (1994) came to the traditional conclusion that there are permanent differences between immigrant cohorts and Bloom, Grenier, Gunderson (1995) emphasize how the new immigration policy and the recession of the 1980s were the causes of reduced assimilation among the most recent immigrants.

The debate in Europe is less heated because the studies are extremely heterogeneous.

Bevelander and Scott (1996) offer evidence which suggests that the case of Sweden can be interpreted in a similar way to that proposed by LaLonde and Topel. Using data from the 1970 and 1980 censuses, and testing for the level of education, they show that the lower wage assimilation of foreign nationals – the inability of the more recent immigrants to reach 90-100% of the national wage within a period of 5 years – can be put down to the changed economic conditions in the receiving country. However, more recent research in Europe is mainly based on longitudinal data.

b. Longitudinal analyses

The recent work of Rosholm, Scott and Husted (2000) found both in Sweden and Denmark that from 1985 to 1995 the job opportunities for male immigrants got worse. However, they used a panel of administrative data showing that the worsening situation was independent on the different market trends in the two countries and that it was due to the structural changes taking place in the markets where the demand for labour was for workers with high interrelation and communication abilities which means that immigrants were at a disadvantage.

Neilson, Rosholm and Smith (2000), in another study involving only Denmark, but again using administrative data covering the same period and testing a random effect model on foreign wages, found that a foreigner's job assimilation increases not with the number of years he/she has been in the

country but the number of years he/she has worked in the country, thus emphasizing that a worker increases his or her human capital only when he is working.

Niesing, vam Praag and Veenman(1994) in the Netherlands analyze the causes of the higher levels – two or three times higher – of unemployment among foreign nationals who, in 1988, represented 5.1% of the population. This, according to the authors, can be traced to three factors. The first factor, which explains 50% of higher unemployment, are the different personal characteristics of the individuals studied; the second and the third factors which account for the remaining 50% are the different individual patterns of behaviour in supply-and–demand terms (discrimination)[12].

In a study of United Kingdom Chiswick (1980) using data taken from the General Household Survey of 1972 found little difference between the income of white foreign nationals and comparable white natives, while black foreign nationals earned 25% less than natives and the difference in wages increased with the number of years of education. The fact that most foreign nationals came from the Commonwealth meant that the experience before emigration was more or less the same as in the receiving country.

The only controversial situation is the case of Germany. The empirical study carried out by Dustmann (1993) employed the individual data panel of GSOEP and showed lower earnings for foreign workers during all their working life and such a finding can be traced to the temporary nature of the migratory flow. This conclusion is contradicted by an analysis of the same dataset by Schmidt (1993) which shows that a foreign worker's earnings are equal to a native worker's earnings after 17 years. Pischke (1992) found that there is no difference in the rate at which incomes grows between foreign nationals and natives in comparable jobs, even though foreign nationals never reach the same wage level as natives.

The different findings depend on the reference group with which the foreigners are compared and as Dustmann has used all natives, white collar *and* blue collar workers, the lack of convergence can be explained by the low skills of the foreign nationals. However, the small number of recent immigrants in the sample makes it difficult to study wage trends.

Mackay and White (1995) study a theme, wage segregation, which is dear to anglo-Saxonresearchers. They built a wage segregation index for UK in 1987 and it revealed very little ethnic variability but it varied inversely depending on education, unemployment and sex.

Grainer and Marciano (1975) examine the French case using data from the 1968 census in a descriptive way and they reach static conclusions, suggesting that the lower average wage for foreign nationals with a nuclear family is mainly due to less investment in human capital and that this varies substantially according to ethnic groups.

c. Longitudinal analyses: quality selection and return migration.

The reason that these two factors do not assimilate can be linked to poor or unsuitable skills upon arrival (Borjas 1985); arrival during an economic downturn (LaLonde and Topel, 1992, Rosholm, Scott and Husted 2000); or discrimination. Researchers also focused on the role played by the migrant's community in favouring or hampering migrants' economic integration (Borjas 1992, Hattonand Leigh 2007); on the importance of language skills which determine the abilities of workers of different nationalities to obtain an appropriate job and wage (Chiswich 1991, Dustmann and Van Soet 2002, Dustmann and Frabbri 2003, Clark and Drinkwater 2002).

Close attention has been paid to the **selectivity problem** (Borjas 1987, Borjas and Bratsberg 1996): if migrants are the best of their native population, they are likely to out-perform the natives of their

[12] The authors' estimates show that discrimination in demand is much greater towards Mediterranean immigrants than towards immigrants from Antille and Surimane who, if they lose their job, have little chance of getting another one .

destination country. More recently the **length of stay abroad** has been investigated and much evidence has been produced on the non-permanent duration of migration, particular with European migration. The large-scale emigration from Southern European countries – Italy, Spain, Portugal and Greece – started with repeated temporary stays in Northern European countries, which became more permanent after the 1973 recession, leading to the adoption, in all host countries, of a more restrictive immigration policy. But this pattern was also widespread for Asian migrants, – for example, Chinese workers (Chew & Liu, 2004) or Malaysian workers – as well as for migrants from New Zealand (Lidgard and Gilson, 2002). The most recent empirical research shows that a large share of migrants are not permanent (Proceedings on Circular Migration, CARIM, 2008) – in Germany, for instance, 60% of migrants were not permanent stayers (Constant and Zimmermann, 2007) – and return migration is becoming a promising area for future research.

In this framework, the work of Dustmann (1997, 2003) on the duration of stay abroad and migrants' decision to return is particularly timely, as it revises conventional assumptions by introducing a control into the assimilation analysis for the probability of staying in the destination country.

Assimilation, however, also depends on the characteristics of immigrants who remain in the destination country. As Borjas (1987), Borjas and Bratsberg (1996) and Dustmann (2001) stress in their articles on the return decisions of migrants, foreign nationals who remain may be either the best or the worst of the group[13]. The migrant decides to return if the migration project fails or, in the opposite case, if the migration project is very successful and allows the migrant to go back home and start a business activity there. If those who remain are the best, the empirical estimates will be biased upwards (over-assimilation), while if the ones who remain are the worst, the estimates will be biased downwards (under-assimilation); in both cases they are inconsistent.

If there is a systematic link between the decision to stay and labour market outcomes, a fixed effect estimate eliminates the bias. If it is not systematic, even fixed effect estimates give unreliable parameter estimates.

The decision to stay in the destination country (or as Dustmann calls it, the "decision to re-migrate"), is modelled on the framework of the emigration decision. In this framework, some authors (e.g. Dustmann (2001)) focused upon the role of income in the destination country on the individual decision to stay, and proxied the income in the country of origin with the migrant education level. However, recent research on return migration and return migration policies; e.g. Cassarino (2007) for the Maghreb areas and Mansoor and Quillin (2006) for many European and Central Asian countries, stress, instead, the crucial role played by economic prospects in the countries of origin in attracting migrants back home. Thus, other estimates[14] stress the changes in the economy of the origin countries as an attractor factor.

Dustmann (2001) and Fertig and Schurer (2007), use in the return decision individual family-related variables.

The Heckman error correction (λ_{it} Inverted Mill Ratio) is introduced in the assimilation equation for the standard wage equation:

d. results

The selection of the return decision can be positive or negative, that is the best stay or leave and this result conditions the assimilation pattern. In the first empirical researches the negative selection in return-terms dominated and the best remained in the destination country, while in more recent

[13] Since his 1987 article Borjas stressed the selectivity of the migration decision as a function of the human capital return of migration. In his 1996 article with Bratsberg he also considers the selectivity of the return decision in a cross-sectional approach and always referring to a Roy return of human capital model.

[14] E.g. Venturini, Villosio 2010, 2008.

research[15] negative selections dominate thus the worse remain in the destination country and naturally they do not assimilate either in terms of behaviour or wages or employment. Not only have migrants a lower wage at their arrival in the destination country, but what is more serious the longer they stay the lower is their pace of wage growth relative to the wage growth of a native with the same characteristics.

Conclusion

All empirical research finds that migrants are unable to assimilate to natives in the labour market and the reasons seem to depend on the lower linguistic abilities, on lower human capital, on job types in which there is no possibility of upgrading, on the concentration in the same area and jobs and many other factors. All the research papers close with specific policy indications to match the specific case study, but in general all suggest more information and a pre-departure training to better connect education, expectation and economic assimilation. The countries of destination should also support assimilation policies to reduce the possible economic and social costs of low assimilation.

[15] Constance Massey 2003, Fertig Schuler 2007, Venturini Villosio 2008

3. The effect on the sending country

This literature on migration is probably the most interesting but also the least settled. The effects of emigration, of course, depends upon the type of emigration whether it be temporary or permanent, upon the migrant being highly-skilled or low-skilled, and upon the destination of the mover.

In addition, it is very difficult to disentangle the effect of migration from the remittances which are sent back home which in a different way affect the family unit and which shape the socio-economic impact of migration.

We can divide migration effects in many ways, we propose the following model which first looks at the physical component of the phenomenon and then at the facet of human capital and money.

1. The first effect is on the **population stock** and on the **composition** of the population by age and gender. If emigration is temporary the effect on the population structure is limited because it can affect fertility or mortality in a smaller way, but if it is permanent the effect is much larger and also creates large social changes.

   In times gone by in Europe male emigration increased the labour force participation of woman and their role as bread winners in society. Today, the large emigration of women especially from Eastern countries has had a negative effect on family composition and the disruption in marriages is much more frequent than before after the departure of the female partner. Demographers usually make an accurate and careful analysis of the effect of emigration in the population structure and they also make predictions for the evolution and changes of future labour force which are fundamental to a positive return on migration[16].

2. The effect of emigration on **growth** is very complex.

   In a closed economy, for a given amount of physical capital, emigration should increase disposable capital *per* worker and thus *per capita* productivity. More resources are available for investment given the lower consumption and growth is enhanced. The reference literature here is the same used in the previous section 2.1.

   This conclusion is not always correct because if there are agglomeration costs, there are also "emptiness" costs. Production needs a minimum size and a market for consumption, thus if consumers disappear production also declines and disappears. Small countries and in general small areas which experience emigration incur poverty because the use of remittances sent back can disincentive local production and favours the imports of final goods from abroad or, at least, from other areas and reduces income opportunities.

   Growth is also affected by the type of emigration, skilled or unskilled, and by the share of a given type of skill which moves.

3. The well known subject of the effects of **highly-skilled** emigration is not settled.

   For a long time literature considered the loss of highly-skilled migrants as the negative side of migration, which contributed positively to the wealth of the country of origin through remittances. Migrants, educated in the country of origin, left the country thus not repaying the country of origin for the investment in publicly-obtained education and, in addition, they reduced the human capital component of the country production function, thus creating at macro level growth reduction (Commander, Kangasniemi, Winter 2002; Gibson , Mckenzie, 2011). In addition, highly-skilled migrants in general are able to reunify their family rapidly, thus they also reduce the remittance flows toward the origin country sooner, and thus they reduce the beneficial effect of sending remittances. The new theory of highly-skilled

[16] See Wiskow C., 2011, International migration of health personnel-challenges and opportunities for North and West African countries, CARIM DP forthcoming.

migration, which will be expanded upon later, revises this approach and stresses the positive effect of highly-skilled emigration on future economic growth (Docquier, Rapoport, 2011).

4. The effect of migration on the labour market of the country of origin can serve as a pressure valve in the case of high unemployment. However, migration history has shown that emigrants rarely come from the pool of the unemployed. More frequently they are employed in their home country, thus their move can create a **labour market mismatch**. There is, for example, research on the doctor brain drain and the consequential mismatch in the labour market, but the mismatch is not only taking place there but also among the less skilled, though it is higher in more crucial professions. Manual workers, plumbers etc., if their emigration is massive enough, can create a large mismatch which slows down economic growth and which, in the short run, creates an increase in costs and can be adjusted only over the medium term (Misha 2007). The labour market mismatch can be the cause of emigration especially in countries where large investments in education are not followed by investments in job creation. The ETF and the CEDEFOP devote much attention to the issue because they focus on both vocational and non-vocational training policies to favour development, and second because they focus on the labour demand and supply in European countries and on skill match. Eastern European countries and the CIS countries are a special case in this sense because the economic transition revisits all the skills ladder and the skills thus create redundant skills and incentives for emigration. Simultaneously, though, mass emigration reduces the possibility of retraining and creates a large mismatch in the labour force. These points will be expanded upon later on.
5. On the effect on the labour market of the country of origin special attention should be given to **return migrants** who can alleviate brain drain but who can also be more favorable because they bring back enriched human capital acquired abroad and also better knowledge of the destination goods market which helps in reshaping domestic production or simply sell the same better. The literature on this issue is country specific, frequently descriptive and it tries to get to grips with who are the migrants who come back, the worst or the best and what are the incentives which favour a return. The first to model the return decision made by migrants in the destination country was Dustmann in his many papers on the subject (1996, 2003,2007). But Dustman did not look at the effect in the country of origin. Frequently, research is based on special surveys in the origin countries with a special sample which covers only returnees (Cassarino 2004, Mansur Quillin, 2006). If they are very interesting because the questions asked are many and very detailed the lack of a counter factual group reduces the interest in policy-option terms (Pishara Vandean 2009). These pieces of researches analyze the attractors back home and the coherence of the job undertaken before departure, one abroad and one after return (Wahba, 2004), but the growth of the country of origin tends to attract the best (Faini, Strom, Venturini and Villosio 2011).
6. The last subject which deserves a survey is the **effect of remittances** on sending countries. An analysis of remittances always starts by explaining that the channels through which remittances reach the country of origin are many and that FMI data are not equally representative of the total remittance flows because in some areas the banks and money transfers collect the majority of flows as, for instance, in the Philippines, while, in other cases, a very large share of the flows passes outside financial institutions and total flow is thus underreported.

The remittance effects have been much examined with a large set of research devoted to the micro effect of remittances, with more standard but less developed research on macro effects.

We will sum up here the main lines of research developed though micro analyses and then we will focus on the macro ones in the expanded section.

- The research results are all in line with the conclusion that remittances alleviate **poverty,** namely that remittances reduce the incidence, depth and severity of income poverty (Adams and Page 2005, Gupta, Patillo and Wagh, 2007), while they have frequently a negative impact on **income dispersion**. Both micro studies and aggregate ones show that while remittances alleviate the poverty of the family left behind, these families are not the poorest ones and income dispersion increases. The effect remains even if the foregoing earnings of the migrant is taken into account (Schiff, 2008). Restrictive immigration policies can increase the costs of migration and thus increase the selection and reduce the positive impact of migration upon income poverty (McKenzie, Rapoport, 2010).
- An important effect of remittances is to increase consumption and to increase **prices** which reduce the well-being of natives. This is called Dutch Disease and the reference article is Amuede-Dorantes Pozo, (2004).
- Remittances have a positive effect on **Education** (Cox and Ureta,2003) because the family receiving money invests a share of it in the education of children[17]. In the case of Eastern European countries investment in the education of children is the first reason which pushes mothers to emigrate and many of them have a model of temporary migration because they stop residing abroad as soon as their children do not need any income support for their education (Alissa Tolstokorova, 2011).
- The effect of remittances on **entrepreneurship** in the country of origin is again very challenging (Massey Parrado 1998, Yang 2008) because it analyses the effect of remittances on growth at micro level.
- Do **remittances favour growth**? While in the past there was a general consensus on the positive effect of remittances on the growth of the country of origin Chami, Fullenkamp and Jahjah (2003) find a negative relation between remittances and growth. They argue that there is a reduction in incentives in producing and working locally, if income ready-to-be-spent arrives without any effort, this is a "moral hazard reason". Solimano (2003) finds a positive relation between the two and the IMF study (2005) found no relation. The issue is very complex and probably at the aggregate level too many patterns get mixed up.
- On the same line, there the effect of remittances on **labour force participation** for example, among women left behind. There is Striking evidence from Albania (Narazani 2008), from Mexico (Amuedo-Dorante Pozo, 2006), and from Nicaragua (Funkhouser, 2006) on the negative effect of remittances on labour force participation among woman left behind, who reduce their role in the labour market. Especially in rural areas it seems that woman use the remittances to reduce their time in informal and non-paid work, while, when remittances are high, men in formal and urban settings reduce their labour-force participation too.
- There is another strand of research on the effect of remittances **at the macro level** and the effect on the **financial system** to which we devote a later section because it is much less known and deserves special attention in the Eastern countries where the financial system is under revision and there is also research on **social remittances** brought back by migrants, which economist are now starting to examine with a special focus upon the effect on the institution in the destination country.

[17] Special attention should be given to **children labour**. On the one hand, remittances favour the reduction of child labour because the increase in income by family reduces the need for their contribution in earning, but, on the other hand, especially in rural area remittances are invested in land and the increase of land to farm increases the need for labour thus the relationship between the two especially in the agriculture areas can be positive.
http://www.childmigration.net/Main_theme_home

3.1 Highly-skilled migration: Brain drain and brain gain and brain waste

Political issues

Should sending countries contrast highly-skilled migration and discourage countries of destination in this policy?

Policy to implement

Revision of emigration policy (i.e. bilateral agreements), revision of domestic educational policy and of student-abroad policies, which can include forced return after the end of the studies or similar enforcement to reduce the loss of human capital.

Survey

Migration has always been a very selective process. In the past when education levels were not an indicator of higher productivity, but work was mainly manual, migrants were more productive than non migrants and they had longer life expectancy than non-migrants[18]. Now having education and skills has become an advantage in migrating, resulting in migrants being on average better educated and more skilled than non-migrants in the sending country, and sometimes also in the receiving country.

The emigration of Highly Skilled (HS) workers originated the well known debate over "brain drain", which started after the Second World War in reference to the emigration of British scientists to the US[19].

The debate is not settled but two views are dominant and these can be usefully delineated.

The *conventional view* considers the outflows of HS detrimental for the country of origin, because these workers are scarce, crucial for the economic development and produced at the expense of the country of origin. If total human capital declines it implies a lower growth path, less foreign direct investments and shows that remittances are not enough to compensate for the outflow. The loss for the country of origin is, however, not very clear cut because skilled migrants might return home with their increased human capital and be beneficial for the country of origin and, in addition, the remittances that they send back might favour economic and social growth.

The *revisionist view* advanced by Stark, Helmenstein and Prskawetz, (1997), Mountford, (1997), Beine Docquier and Rapoport, (2001) stresses that human capital loss – brain drain – can be transformed into human capital growth – brain gain – in the sending country, if the higher probability of emigration among the highly-educated gives an incentive to enroll in higher education and, emigration being limited, the final result will be a more educated labour force. This will favour technological transfers, a more productive use of remittances and. in the aggregate, economic growth. So without considering the positive effects of remittances and the return of highly-skilled migrants, highly-skilled migration could increase the human capital of sending countries.

Data

Only destination countries report migrants by level of education and skill, thus the relevant information is mainly collected in destination countries, and the most exhaustive sources are available thanks to the efforts of Doquier and Marfouk (DM)[20] and the OECD team (DIOC), based on the

[18] Sermet, Laurier, Khlat, 1998.

[19] Reference Brandi 2001, The Evolution in theories of brain drain and the migration of skilled personnel, Studi Emigrazioni, n.141, cited also by Michael Clemens 2009, Skill Flow: A Fundamental Reconsideration of Skilled-Worker Mobility and Development, Human Development Research Paper n.2009/08.

[20] See Docquier Marfouk 2006.

Census of OCDE countries of destination. The literature on the emigration of the highly skilled has increased in the last 15 years because more data were available but also because there was a political interest on the part, for example, of the EU Commission with the Blue Card Directive[21] (inside the EU Global migration Approach)[22] which tries to ease the entrance and the mobility of the highly-skilled into the European labour market.

The definition of skill is very complex and problematic, thus this literature has used a pragmatic approach and considers Highly Skilled Migrants (HSM) to be only the tertiary educated and research tries to understand if tertiary educated emigrants have a positive effect on the enrollment in tertiary education: the reference paper here is Beine Doquier Rapoport (2008).

The model tested is quite simple.

a- The change in the stock of human capital in the origin country dHO/H – where HO is the stock of human capital in the origin country, and HF the stock of human capital in the foreign country, and H =HO+HF the total human capital – is caused by the change in the stock of human capital abroad dHF/H (eq.I), plus, according to the specification, additional explanatory variables and controls.

$$\frac{dHO}{H} = a + b\frac{dHF}{H} + cX_i + \gamma\varepsilon \qquad \text{eq.I}$$

A problem is the plausible endogeneity of the highly-skilled migration rate. This can be due to a causal relation that might exist between the migration rate and human capital growth, thus the effect of education level on the migration rate has to be tackled by a first stage regression which solves the endogeneity problem.

We presents some results of different tests of this hypothesis collected for the CARIM project on Highly Skilled Migration in the Mediterranean and Sub Saharan African countries. Table 1 compares the specification adopted by the two studies which present results for the CARIM area the paper of Beine, Docquier and Rapoport (BDR) (2008)(col.1) and the paper of Easterly and Niarko (EN) (2008) on Africa (col.2)[23]. They both analyze the aggregate effect of highly-skilled migrants on the highly-educated population in the origin country. Beine, Docquier and Rapoport consider all the countries available in the DM dataset, while Easterly and Niarko only look at the African ones while employing the same DM source. As we already explained before, the DM dataset has just two years, 1990 and 2000. Thus only a cross-sectional approach is possible using a beta-convergence analysis. When the partial correlation between growth in human capital over time and its initial level is negative, there is β-convergence. In other words, a negative sign for the coefficient of the initial value of human capital would indicate convergence or a potential catching-up effect. Thus countries with a human capital close (far) to their steady-state level such as Lebanon (Mali) will experience a slowdown (speed-up) in human-capital growth which is commonly referred as conditional convergence[24].

The two estimates contrast.

In BDR (2008) skilled emigration (Ln(p90)) has a positive and significant effect on the education of the labour force at home suggesting brain gain. Also the variable which measures the stock of human

[21] See Council Directive 2009/50/EC of 25 May 2009 on the conditions of entry and residence of third-country nationals for the purposes of highly qualified employment.

[22] See for instance European Commission, Communication from the Commission to the European Parliament and the Council.*The Global Approach to Migration One Year On: Towards a Comprehensive European Migration Policy*, COM (2006) 735; European Commission, Communication from the Commission to the European Parliament and the Council. *Applying the Global Approach to Migration to the Eastern and South-Eastern Regions Neighbouring the European Union*, COM (2007) 247.

[23] This section refers to the research paper Venturini Narazani 2010, CARIM conference on Highly Skilled in the Mediterranean and Sub Saharan Africa.

[24] Barro and Sala-I-Martin (1992), Sala-I-Martin (1996), Mankiw et all. (1992) are usually referred to as seminal works depicting the β-convergence models from a neo-classical standpoint.

capital in the country in the initial period (Ln(H90)) is significant and negative as expected, indicating that the level of human capital in the country of origin matters. The lower it is, the larger the growth in education will be. The stock of education is strongly correlated with the *per capita* income, but this variable performs much better than others. The dummy for SSA is negative and significant. The control for population density and remittances as well as the interaction for the GNP *per capita* were not.

Table 1 : Estimation result from BDR and EN regressions

	Log change in human capital stocks		Enrollment rates in logs			
	BDR (2008)	EN (2008)	Faini (2003)		BDR (2009)	
			Tertiary education	*Secondary education*	*Tertiary education*	*Secondary education*
constant	0,0214	0,234	-60.9***	-122.9***	−1.695***	-0.802
	(0.2)	(1.27)	(11.71)	(5.82)	(3.03)	(1.60)
ln(p90)	0.0573**	0,343	-0,11	0.37*	−1.261***	0.563*** a
	(2.22)	(0.56)	(1.79)	(2.02)	(3.02)	(2.71)
ln(H90)	−0.2238***					
	(6.38)					
DENS90	-0,1085	1.83**				
	(0.99)	(3.38)				
REM90	-0,0053					
	(1.14)					
log(SE90)					1.092***	
					(11.03)	
log(PRI90)						0.883***
						(8.63)
log(PUB)					0.007	0.176***
					(0.07)	(3.36)
Income per cap			9.75***	21.5***		
			(5.9)	(7.32)		
R2	0,409				0,66	0,68
Hausman	0,552		OLS	OLS	OLS	OLS
Jansen		7,318				
N_obs	103	157	51	45	118	123

Variables : *p90* = skilled emigration rate in 1990. a in the last two column the variable is 1-p90; *H90* = *ex ante* proportion of educated. *SSAD* = sub-Saharan African dummy, LATD = dummy for Latin American countries includded, DENS90 = population density in 1990. REM 90 = workers' remittances as % of GDP, SE90=enroll

BDR(2009) is a IV regression with instruments: population size and stock of migrants in OECD countries.

EN(2008) is a IV regression with instruments: dummies for former colony of Great Britain and France, the log distance from US, France and UK and log of population size. Coefficient c is the 1343.

Notes . Robust t-statistics in brackets. White corrections for heteroscedasticity.

Hausman and J test report the p-values for respectively the null of no endogeneity of migration rates and the null of valid instruments (no correlation with error term).

*, ** and *** denote significance at 10, 5 and 1% levels respectively.

BRD:Beine, Docquier and Rapoport, EN: Easterly and Nyarko.

A similar test by Easterly and Niarko limited to African countries gives different results, (Table.1 col.2) the change in highly-skilled migration is not significant and the only significant variable is the growth in population[25]. Of course the African countries considered are not the only SSA countries

[25] The instruments used in the first stage are: dummies for former colonies of Great Britain and France, the log distance from US, France and the UK and the log of population size. The most powerful instruments seem to be the distance from the US and population size. In a companion equation Easterly and Niarko present the results of the effect of highly-skilled emigration on the growth, and the variable is never significant while secondary and tertiary enrolment and openness to trade are significant.

included in the CARIM database and this might be an explanation of the heterogeneity of the sample. But given the lower average level of tertiary education it might hide a more pervasive education effect.

In the second part of Table 1 we report the effects of the emigration rate for the tertiary educated on the enrollment rate of both the tertiary and the secondary educated following Faini (2003) and replicated by Docquier and Rapoport (2011).

Both results show the positive effect of highly-skilled emigration on secondary enrollment, which is interpreted by Faini (2003) as the pursuit of secondary education to allow a later move abroad to complete tertiary studies. The effect of the tertiary emigration rate on tertiary enrollment is, instead, non significant in the Faini tests and negative in the DR (2011), which also has a negative dummy for SSA.

These results are a very important stimulus for the debate, but the weakness of the tests rely on the dataset employed more than upon the specification adopted. As mentioned already, the DM dataset only correctly reports highly-skilled emigrants to the OECD, while in the area examined highly-skilled migrants from the Mashreq go in large numbers to the Gulf countries, and from the SSA they go to neighboring African countries and, indeed, everywhere. A cross-sectional approach mixes countries for which the aggregate skill emigration pattern is well known, i.e. the Maghreb countries with countries where 50% of the outflow is missing. Thus the coefficient suffers "attenuation bias" and the empirical results have to be treated with caution, even if the general conclusions of the empirical research are convincing.

BDM (2008) calculated the effect of brain gain or brain drain for all countries. We present only the CARIM countries because emigration from the Eastern countries started after the 1990s and thus is not collected in the dataset adopted by the authors in Table.2. The table presents in the first column the loss in labour force due to emigration which is, of course, negative for all countries, while, in the second column, it presents the effects of highly-skilled emigration on highly-skilled labour forces, which can be negative if there is brain drain or positive if the emulation effect counteracts the loss in human capital from emigration, brain gain. The third column shows the effect in percentages of the total highly-skilled labour force. Not surprisingly for the majority of countries studied here the effect is nil or positive, while only for Lebanon is the effect significant and negative as expected.

Table 2. Results of Brain Gain Analysis BDR, 2011

	Effect of Highly-Skilled emigration on total domestic Labour Force	**Effect of Highly-Skilled emigration on Skilled labour force**	**Effect of Highly-Skilled emigration on proportion of skilled LF *Brain Gain***
Countries experiencing beneficial brain drain			
Libya	-9186	22575	1.10%
Egypt	-135204	202416	0.70%
Jordan	-28054	7439	0.70%
Syria	-44301	31541	0.60%
Turkey	-3522	58858	0.20%
Chad	-1200	4371	0.20%
Sudan	-17086	9840	0.10%
Niger	-949	797	0.00%
Mali	-3487	-973	0.00%
Countries experiencing a detrimental brain drain			
Tunisia	-23298	-8637	-0.20%
Senegal	-13889	-5724	-0.20%
Algeria	-43766	-31182	-0.20%
Morocco	-84703	-40772	-0.30%

Lebanon	-104570	-83527	-3.80%
Extracted from: Beine, Docquier, Rapoport 2008 p.645			

At first glance the application of the revisionist view to the EaP countries seems inappropriate because their average level of education is very high and HS emigration is not spurring further investment in education, but rather helps to finance the education of the new generation in a phase where jobs and income are lacking.

Fig.2. Share of migrants to home labour force by skills in 2000
(Source: Beine-Docquier-Marfouk, 2009)

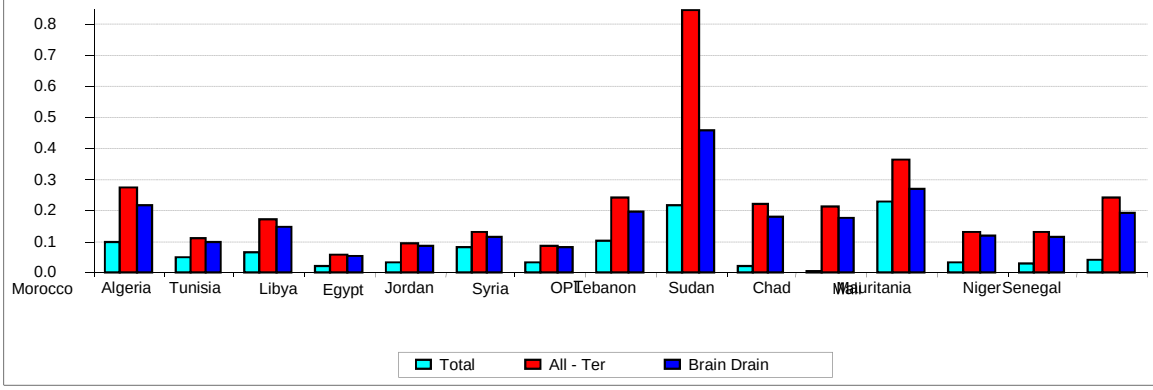
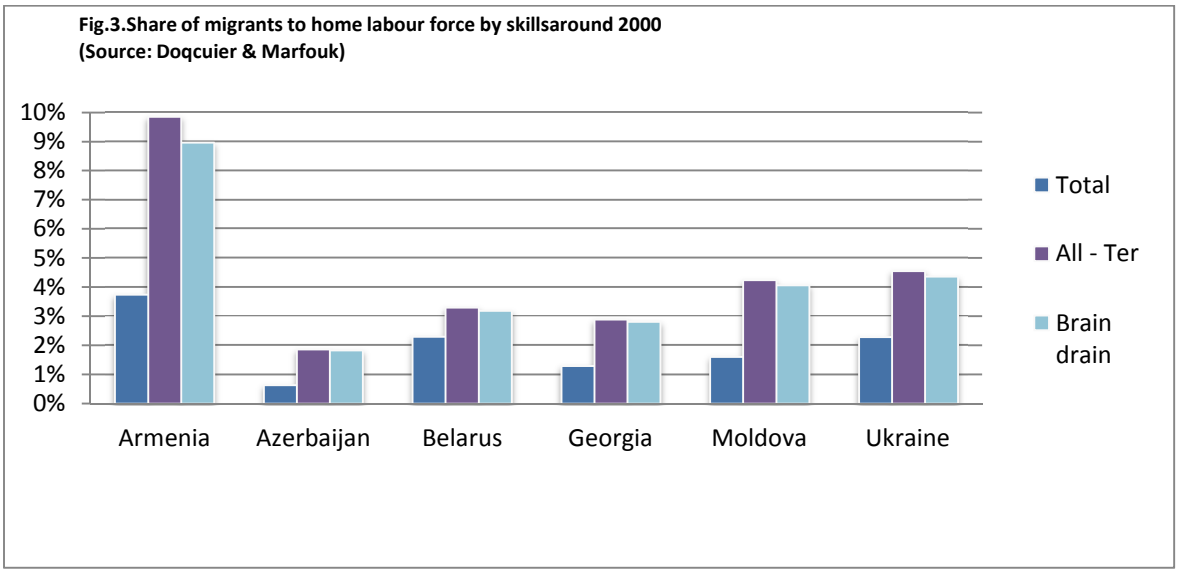


Fig.3.Share of migrants to home labour force by skillsaround 2000
(Source: Doqcuier & Marfouk)



Unfortunately the dataset built and used by DM and BDR is not suited to studying the effect o the emigration from the AeP countries which took place mainly in the second half of the 1990s and thus is not well reported in the 2000 Census. In addition, the evaluation of the results is complicated by the economic transition which is transforming and revising production, the functioning of the institutions and the skills that are needed. In addition if the level of education is very high, as it is in many Eastern European countries, the positive brain gain which also depends upon the initial level will be limited.

The reason why highly-skilled workers move are, however, the same all over the world. Reading the list of reasons presented by Ivakhnyuk I (2006) for the emigration of the highly-skilled from Russia three quarters of the respondents talk of low wages at home, half of them of the decline in the prestige of intellectual labour, another half mention the lack of opportunities in realizing scientific potential, while 19% describe vague career prospects. The social impact was very important: 30% of respondents stressed the fear of social outburst, and the anxiety for their children's future. We can find

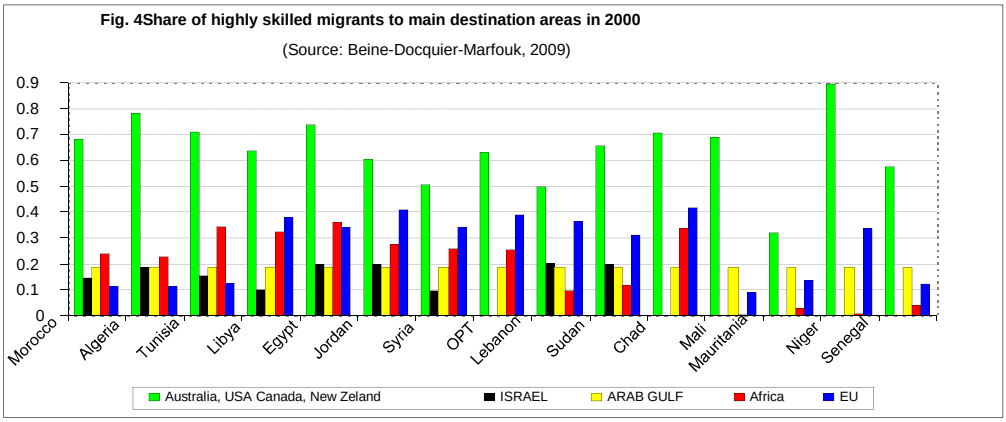
a similar list for the highly-skilled migrants in the CARIM study and probably the reasons are easily comparable among the highly-skilled of the European Union .

Very little is known about brain waste before departure even if the reason presented for emigration seem to suggest that it is one of the main push factors. The analysis concentrates upon the correction between skills and jobs in the destination countries.

What emerge in the **Brain Waste** literature is that brain waste is higher where more highly -skilled migrants go namely the US; Canada, Australia and New Zealand. This happens, however, only because the more highly-skilled go there attracted by a greater number of highly-skilled jobs, the higher wage premium and also by the immigration policies easing highly-skilled entrances. Figure 4 below from Venturini, Narazani (2010) shows that also for the Mediterranean and Sub Saharan Countries the US, Canada, Australia and New Zealand represent the major highly-skilled attractors.

Fig. 4Share of highly skilled migrants to main destination areas in 2000

(Source: Beine-Docquier-Marfouk, 2009)



Many reasons, however, stand behind the non-appropriate use of an educational degree abroad and, indeed, at home: the recognition of each educational degree, something which is difficult abroad, the lack of knowledge of the language of the destination country which is crucial for non manual jobs, the quality of education and the field of studies which is not always in demand and last but not least discrimination against foreign labour and the resulting segregation of labour.

Migrants make a difficult choice because in the destination labour markets the options available are frequently below their level of skill but the wage that they can earn is much higher as seen from the country of origin, thus these wages become attractive[26].

But an even more negative implication of brain waste abroad is the possibility that the little skills accumulated in the destination country results in the phase of return in an even larger waste of capital, while successful stories point to the possibility of a wage premium for experiences abroad (Barrett, Goggin 2010) . In the Ukrainian case Olga Kupets (2006) in her very accurate analysis of the brain waste of returned migrants found little connection between the employment held abroad and the employment held at home by returned migrants. This result is, however, very common in this type of studies because the migrants that return are, in general, the least successful or simply the two economies are not specialized in the same sectors, but in this case what is more important is that they are less able to find regular jobs and they end up in the informal sector.

[26] See Epstein and Venturini 2010.

Conclusion

Highly-skilled migration is a problematic issue and the evidence of a positive effect on tertiary educated migrants is strongly dependent upon the average initial level of human capital which prevails in the country of origin. In many cases, highly-skilled emigration is inevitable, because there is an over production of educated workers in excess of local demand which is insufficient for reasons which are not always under control, for example, in the Lebanese case. What sending countries should do is to get the best from the outflows in term of returns on human capital from workers and students by profiting from the TOKTEN program which favours temporary return for training and by spurring transfers of monetary and human capital. The total balance of highly-skilled migration even if it is negative in the short term can, with appropriate incentives, be transformed into an asset for future development and an asset which increases future wellbeing.

3.2 Skill Mismatch: Causes or Effect of migration

Political Issue

Should an origin country impose a constraint on the mobility of needed skills?

Policies to implement

Should countries introduce a selection on migrants' skills? Or an incentive to restrain migration or should it let them go and invest in a revision in the technology of the production?

Survey

The title of this section **Skill Mismatch: Cause or Effect of Migration** will prove, we believe, a very interesting subject for the research. Unfortunately research here is still preliminary because it necessarily focuses upon defining and measuring the skill mismatch. The workshop organized by the ETF and the CEDEFOP measured the skill mismatch in terms of unemployment in terms of the level of education and vacancies by level of skill in the project countries, where Moldova and Ukraine were included with Turkey and other sending countries.

The objectives of the project was not an inquiry into the effects of the mismatches but only to ascertain the existence of these mismatches.

The results reveal a first mismatch between education and employment at local level, namely that the investment in education did not help find a job. The rate of the unemployed with tertiary education was increasing and higher than the rate for lower education levels, even if the positive return on higher education still exists. The mismatch between education and employment is very common, and though it has been termed "brain waste", it is not clear if the problem depends on the demand side or on the supply side. Differences exist according to different countries. In the CIS countries the restructuring of production and of economic priorities are creating mismatches between previous education levels and specialization and jobs which are available.

In the North African countries, instead, it is the large investment in education and the reduction in employment in the public sector which creates an excess supply of educated labour in search of employment. A complementary policy to create jobs should be put in place when an investment in education is undertaken, otherwise an excess supply is produced which creates an emigration pool.

None of the studies, however, deals with the link between mismatch and migration. If emigration creates a mismatch in the labour market, a mismatch which can, in the short run, only be solved as it was in Latvia with additional immigrants or, instead, if it creates deskilling in the production, or a slow down of economic and social growth.

This is also the debate behind brain-drain literature which frequently sees the emigration of the highly-skilled as a "solution", e.g. in Lebanon, or as a loss, e.g. in Morocco. The stability of the economic model in the two examples presented above allows an interpretation of the outflows while the transition among the CIS countries reduces the possibility of simply defining the role of migrants without a deeper analysis.

This subject is very close to the **labour shortage**[27] question which is based on indicators derived among employers or by labour-market signals (vacancies, employment growth). A very frequent demand by policy makers is whether migration can solve labour market shortages in the short run or in the long run if a more demographic approach is used. Both long and short run labour shortages imply changes in the labour force composition and an approach to migration as a permanent move or as a temporary one which, of course, can conflict with each other.

Conclusion

An interest in understanding the size and the causes of the skill's mismatch is widespread, but the need for appropriate information either from an econometric model of the economy or from employer forecasts make the solution difficult. The link between the skill mismatch and migration is not clear-cut, while migration is always proposed as a short-run solution for skill shortages in the destination country, less clear is the question of whether skill mismatch is a cause or a consequence of migration. Frequently both cases are possible.

3.3 Remittances and balance of payment, the exchange rate, inflation and the liquidity of the financial market and social transfers on institutions.

In this section we focus on the effect of remittances at the macro level and the more innovative and relevant research stream on the effect of migration upon the financial system, there is also the question of institutional building which is so important in sending countries.

When the focus is on the macro impact of remittances the first point is the effect on **the balance of payments**. For many developing countries remittances represent a significant part of international capital flows, being more important than exports revenues, Foreign Direct Investment (FDI) and AID. Arriving in foreign currency, remittances favour the equilibrium between inflows and outflows, thus compensating for deficits in current account of the Balance of Payments.

The effect of the **exchange rate** is conditioned by the effect of remittances on the balance of payment. If remittances are spent in the country of origin to produce goods for export, they should cause appreciation of the national currency which might be beneficial, if the country is poor in raw materials (gas, oil etc) and if it imports a lot of them. *Vice versa* if remittances are spent abroad to import foreign goods they might also produce a depreciation in currency.

The effect on **prices** is also automatic. If the supply of goods is given, for example, in the residential market, and remittances are used to buy properties, the result will be an increase in property prices which will produce poverty among the families without migrants. If, in general, the supply of goods is not elastic, the increase in demand induced by remittances increases prices and increases too inflation, which produces a reduction in real wages (thus poverty) and an increase in the prices of the exports which reduce the competitiveness of national products abroad.

Underdevelopment is coupled with **under financial development**, and remittances can contribute to reduce financial constraints and favour investments and growth. This is a recent and very promising research field. The idea is simple and convincing. The difficulties in borrowing in developing or, in transition countries, in reducing growth, and remittances can substitute or integrate the formal

[27] See Richarson 2007,Veneri 1999, Green, Machin, Wilkinson 1998, Boswell, Stiller, Straubhaar 2004..

financial system in an efficient way given the lower cost (no interest rate or bribe to pay) and larger diffusion being closer to the final user. The paper of Giuliano and Ruiz-Arranz (2005) by using a cross country data set on remittances of 100 countries from 1975-2002 found a positive relation between remittances and growth only when a variable proxy of financial constraint is added. Remittances were defined as the sum of three items in the IMF Balance of Payment Statistics Yearbook (BOPSY): workers' remittances, compensation of employees and migrants transfers revised by the authors according to specification obtained by the IMF desk offices. The explanatory variables of GNP growth are remittances on GDP (REM/GDP), and four different measures of the financial development: liquidity liabilities of the financial system (M2/GNP); the sum of demand, time, saving and foreign currency deposits to GNP (DEP/GNP); claims of the private sector divided by GNP (LOAN/GNP); credit provided by the banking sector to GDP (CREDIT/GNP) and inflation; openness to international trade; average number of years of secondary education; population growth; government fiscal balance; and investment ratio.

The results show that the positive effect of remittances on growth (a positive and significant coefficient of the variable without interaction) is obtained by a substitution of the financial system (the negative coefficient of the variable remittances interacting with each proxy of financial development). The effect is larger the lower the financial development of a country and can also become negative for capital markets with limited imperfections as in this case where credit and insurance can be obtained by a well functioning banking system. The same results hold in another explanatory equation of total investment in GDP where remittances alone play a positive role, while interacting with a proxy of financial development these hold the usual negative sign. The results support the interpretation that if the financial system is not mature, investments are financed by remittances.

In the case of the Central America, Mexico and the Dominican Republic Muncada (2005), by using a panel data set over 1970 to 2003, found, instead, that by controlling for financial development the effect of remittances is positive, suggesting that financial development leads to a better use of remittances in boosting growth.

The paper of Aggarwal, Demirguç-Kunt and Martinez Peria (2011, JDE) concentrates upon the relationship between financial development and remittances. By using a cross-country data set on remittances of 99 countries from 1975-2003 the author analyses the impact of remittances on the financial sector measured as a ratio of bank credit to private sector or bank deposits to GDP. Many controls are introduced: country size (GDP), level of development (GDP *per capita*), inflation, current and capital account openness (dual exchange rate regime, FDI, aid; portfolio flows and share of exports), the index of creditor rights and a dummy for countries with British legal rights. The estimates by fixed effects and random effects reveal a positive role of remittances in explaining financial development. The reverse causality problem, namely that improvement in the financial system induces a better reporting of remittances and a larger use of that channel to send money home has been approached by lagging regressors in using lagged values of the regressors as instruments in a GMM dynamic framework. In all specifications remittances hold a very significant and positive sign.

Another very promising line of research is established by moving the focus from the strict financial transfer of remittances to the less tangible effect of, what might be called, **social remittances on the institutions of the destination country.**

The role played by migrants and migration in the evolution of the quality of the institution in the sending countries is one of the more interesting and promising fields of research to be examined here. The effect of economic remittances is amplified by the change in economic environment which is designed by the institution and their quality thus affects migration in the sending country amplifying the economic effect if it is able to produce positive externalities in the socio-political arena.

Economists have recognised the importance of this field and have carried out very fine empirical analysis which are though weak in describing the political structures of institution building; thus the implication should be taken with care, but it should also be recognised as a challenge to existing models.

In this section we will review the main papers in the field and we will stress the relevancy and the weaknesses of the various approaches.

Spilimbergo in his 1999 article "Democracy and Foreign Education on the American Economic Review" took the lead. By using a unique panel dataset on foreign students starting in the 1950s and various democratic measures, he was able to show that foreign students educated abroad in democratic countries foster democracy in their home country.

Along similar lines Docquier, Lodogiani, Rapoport and Schiff (2011) approached the role of migration in democratization and in political change of the country of origin. The move abroad can be an individual solution in a context of economic and social distresses, and remittances can alleviate social distress and reduce the pressure for a change as was the case in Mexico and Haiti. However emigrants from abroad can be active in the institutional change process and by the transfer of values and norms they can affect the efficacy of the institutions of the country of origin. In addition emigrants' skill selection can play an important role. Highly-skilled emigration reduces the human capital of the domestic labour force and will reduce not only economic productivity but also the general institutional efficiency of institutions, while social transfers in norms can be larger and compensate the costs.

Their empirical research which uses the Freedom House (POLITY IV) dataset to build the variables Political Right (PR), Civil Liberties (CL) and the Economic Freedom of the World project to build an index which proxies the policies of the Government in favour of economic freedom. Migration data are from Defoort (2008). The results show that openness to migration improves the quality of institutions, while highly-skilled migration has a positive but ambiguous impact.

Lodigiani and Salomone (2011) investigate the effect of international migration on women's empowerment in politics, more particularly the effect of migration on female parliamentary share in sending countries. By using a panel from 1960 to 2000 of women in parliament and migration rates they found a positive relationship between the two variables after controlling for selection issues, observable and unobservable heterogeneity..

Mahmoud, Rapoport, Steinmayr and Trebesch (2011) apply the previous approach to Moldova. According to their very preliminary empirical analysis, migration played an important role in the change in the Communist Government in July 2009All these results are interesting and will stimulate research on broader and richer issues. Economists have, however, to deepen their knowledge of the political system which until now has been too simplistically represented.

Conclusion

More research is needed to disentangle the effects of emigration on the sending country.

However, very straightforward results show that remittances not only alleviate poverty and that they have a direct effect on production and demand but also that they play an important role in complementing the financial system in favouring investments and also in strengthening institutions.

4. General Conclusions

As was noted in the introduction, the objective of this survey was to spur research into migration issues in the CIS by presenting the main debates and the main research lines of the Anglo-Saxon economic approach.

One of the main fields of research has been the analysis of the forces which determine migration flows. Is migration pushed by the supply forces or pulled by demand? Are poverty, the lack of jobs, the large dimensions of the family, the uncertainty about future income the "pushers" towards a migrant destination? Or are, instead, the destination forces the main drivers? Are higher wages and

many job offers in the destination country what attract foreign labour forces? What role do the migration policies of the destination country play? Are these policies able to condition the inflows, their size and type? These are examples of the many questions that economic research on the "migration choice" throws up. Of course, the accuracy and the array of the data condition the answers.

Migration policy does not only define the size of inflows but also the type and skill of the same and all this decides the effect of migration in the destination countries.

Research in this field is significant because the dataset available is more accurate.

Should we let in migrants even if they compete with native workers? The objective of a migration policy is, *in primis*, the well-being of the domestic labour force, thus if migrants displace native labour force they should be limited. The empirical research on this subject is very developed (see section 2.2) and suggests that competition is very, very limited and that complementarity is more typically the rule.

But even if migrants complement the domestic labour market, they will inevitably use the welfare services provided by the destination states and paid for by the general fiscal system – education, health, social security and unemployment benefits – more than natives and for this reason they will prove costly. This is the subject of another large field of research which explains the greater use by migrants of welfare because of their greater eligibility (lower income and larger family dimensions) (section 2.3). Thus a migration policy which worries about a larger migrant use of the welfare state should select migrants according to the characteristics which reduce their use of welfare and, in general, skilled migrants who receive higher wages are will live with fewer references to the welfare state.

In an aging society their total costs should, however, be set against the intergenerational benefits of arriving migrants, even if, in the short run, they cost more. The economic assimilation of foreign nationals in wage and employment terms is part of the picture (section 2.4). If migrants under-perform the natives, that is if they do not reach the same wage profile as natives with the same characteristics or do not have the same ease of employment, this will create limited social assimilation, and will reduce their contribution to economic growth, the main issue here.

Do migrants favour growth? They have a positive impact on aggregate production. But growth in *per capita* production is related to the skill composition of the migrant flows. If their skill level is above the native skill average then the *per capita* growth will also increase (section 2.1) producing benefits.

References

Acosta, P., "Entrepreneurship, Labor Markets and International Remittances: Evidence from El Salvador," *International Migration Policy and Economic Development: Studies across the Globe*, 2007.

Adams R. Page J, 2005, Do International Migration and Remittances Reduce Poverty in Developing Countries *World Development , 33, 1645-69*

Aggarwal R., Demirgüç-Kunt A., Martinez Peria M.S.,2011, Do Remittances Promote Financial Development?, *Journal of Development Economics*.

Amuedo-Dorantes, Catalina and Pozo, Susan , 2004, Workers' Remittances and the Real Exchange Rate: A Paradox of Gifts, *World Development*, August, 2004.

Amuedo-Dorantes, Catalina and Pozo, Susan, 2006 "Migration, Remittances, and Male and Female Employment Patterns," *American Economic Review* in *96 (2)*, ed. , 2006, 222–226.

Amuedo-Dorantes C., Georges A., Pozo S., 2008, Migration, Remittances and Children's Schooling in Haiti, IZA DP 3657

Andrén,T. 2007. "The Persistence of Welfare Participation," IZA Discussion Papers 3100

Altonji J.G., Card D., 1991, The Effect of Immigration on the Labour Market Outcomes of Less-Skilled Natives, in Abowd J.M., Freeman R. (eds.) *Immigration, Trade and the Labour Market*, Chicago University Press, Chicago

Barone G., Mocetti S., 2011, With a Little Help from Abroad, *Labour Economics*, 18, 664-675.

Barrett A., Maitre B., 2011, Immigrants Welfare Receipt across Europe, IZA DP 5515.

Barrett A., Joyce C., Maitre B., 2011, Immigrants and Welfare Receipt in Ireland, IZA DP.5516.

Barrett A., McCarty Y., 2008, Immigration and Welfare Programmes: Exploring the Interactions between Immigrant Characteristics, Immigrant Welfare Dependence and Welfare Policy, in print *OXREP*, Ox.

Barrett A., Goggin J., 2010, *Returning to the Question of a Wage Premium for Returning Migrants*: National Institute Economic Review, 2010, 213 (1), R43-R51)

Barro, R. J & Sala-i-Martin, X., 1992. "Public Finance in Models of Economic Growth," Review of Economic Studies, Wiley Blackwell, vol. 59(4), pages 645-61, October.

Bauer T., Zimmermann K., 1997, Integrating the East: The Labour Market Effects of Immigration, in Black S.W. (ed), *Europe's Economy Looks East: Implications for Germany and the EU*, Cambridge University Press, Cambridge, pp.269-306.

Beck T., Levine R., Loayza N., 2000, Finance and the Source of Growth, Journal of Financial Economics , vol.58, 261-300.

Beine M., Docquier F., Rapoport H., 2001, Brain Drain and Economic Growth: theory and evidence, Journal of Development Economics, vol.64, pp.275-289.

Bertoli S., Fernandez-Huertas Moraga, 2011, Multilateral Resistance to Migration, IZA DP.5958.

Bevelander, P., Scott, K. 1996 The employment and income performance of immigrants in Sweden, 1970-1990. *Yearbook of Population Research in Finland*, Vol. 33, pp.157-72, Helsinki, Finland

Bibson J David McKenzie, 2011, Eight Questions about brain drain, Policy Research Working Paper 5668

Bloom D.E., Grenier G., Gunderson M., 1995, The Changing Labour Market Position of Canadian Immigrants, *Canadian Journal of Economics*, vol.28, n.4b, pp. 987-1005

Blume K., Vernare M, 2007, Welfare Dependancy among Danish Immigrants, European *Journal of Political Economy*, vol.23, n.2, pp.453-471.

Boeri T., Monti P., 2007, The Impact of Labour mobility on public finances and social cohesion, in European Integration Consortium, Labour Mobility within the EU in the context of enlargement and the functioning of the transitional arrangements, Deliverable 5, VC/2007/0293.

Bonin H.(2002) Eine fiskalische Gesamtbilanz der Zuwanderung nach Deutschland, IZADP516;

Borjas, George. 1985. "Assimilation, Changes in Cohort Quality, and Earnings of Immigrants." *Journal of Labor Economics*, Vol. 4, pp.463-89.

Borjas, G., (1987), 'Self selection and the earnings of immigrants', *American Economic Review*, **77**, 531-553

Borjas G., 1999, Immigration and the Welfare Magnets, *Journal of Labour Economics*, vol,.17, n.4, part1, pp.607-637

Borjas G. 2003 The demand curve is downward sloping: re-examining the impact of immigration on the labor market. *Quarterly Journal of Economics*;118; 1335-1374.

Borjas G., Bratsberg D., (1996), 'Who leaves? The Outmigration of the foreign-born', *Review of Economics and Statistics*, 165-176

Borjas G., Hilton L., 1996, Immigration and the Welfare State: Immigrant Participation in means-tested entitlement programs, *The Quarterly Journal of Economics*, pp.575-604.

Borjas G. Trejo, *S., 1991*. "Immigrant participation in the welfare system," *Industrial and Labor Relations Review*, 44(2), 195-211.

Boswell C. Stller J., Straubhaar T., 2004, Forecasting Labour and Skills Shortages: How Can Projections Better inform Labour Migration Policies, paper prepared for the EU Commission, DG Employment and Social Affairs, Migration Research Group.

Brandi, C., 2001, The Evolution in theories of brain drain and the migration of skilled personnel, Studi Emigrazioni, n.141.

Butare T., Favarger Ph., 1995, Analyse empirique de cas de la Suisse, in Burgenmeier B. (ed.) Main d'Oeuvre Etrangere. Une analyse de l'économie Suisse, *Economica*, Paris, pp.79-119.

Bratsberg B., Raaum O., Roed K., 2010. "When Minority Labor Migrants Meet the Welfare State**,**" *Journal of Labor Economics*, University of Chicago Press, vol. 28(3), pages 633-676, 07.

Bruckers et al. 2011, The Battle for Brain, FRD web.

Bruecker H. 2011, The labor Market Challenge. Does International Migration Challenge Labor Markets in Host Countries? A Critical Review of Recent and Traditional Literature, EU-US Immigration Systems; 2011/21 http://cadmus.eui.eu/handle/1814/19820

Bruecker H., Epstein G., McCornick B., Saint-Paul G., Venturini A., Zimmermann K., 2002, *Welfare state Provision*, chapter 5 in Boeri T., Hanson G., Mc Cornick eds Immigration Policy and the Welfare State, Oxford: Oxford University Press.

Bruecker H, et Al, 2008, Labour mobility within the EU in the context of enlargement and the functioning of the transitional arrangements, European Commission

Bruecker H., Fachin S. Venturini A., 2011, Do Foreigners Replace Natives Immigrants? Evidence from a Panel Cointegration Analysis, *Economic Modelling*, DOI:10.1016/j.econmod.2010.11.020

Brucker H., Jahn E., 2008, Migration and the wage curve: a structural approach to measure the wage and employment effects of migration, IZADP.3423.

Brücker H., Silverstovs B., 2006, On the Estimation and Forecasting of International Migration: How Relevant Is Heterogeneity Across Countries? in: *Empirical Economics*, 31(3), 735-754)

Card D. 2001,Immigrant In.ows, native Out.ows and the Local labor Market Impacts of Immigration. *Journal of Labour Economics*; 19; 22-64.

Card D.2005 Is the New Migration Really So Bad? *Economic Journal* ,115; F300-F323.

Cassarino, Jean Paul. 2007. *"Return Migrants to the Maghreb: Reintegration and Development Challenges."* MIREM, RSCAS/EUI, Florence.

Cassarino J- P., 2004, Theorising return migration: the conceptual approach to return migrants revisieted, International Journal on Multicultural Societies 6(2), 162-188.

Castronova E., Kayser H., Frick J., Wagner 2001, Immigrants, Natives and Social assistance: Comparative Take-up inder Comparable Circumstances, *International Migration Review*, vol.35, n.3, pp.726-748.

Chew K., Liu J., (2004), 'Hidden in Plain Sight: Global Labor Force Exchenge in the Chinese American Population, 1880-1940', *Population and Development Review*, **30**(1), 57-78.

Chami R., Fullenkamp C., Jahjah S., 2003, Are Immigrant Remittances Flows a source of Capital for development?, IMF03/189.

Chiswick, Barry. 1978. "The Effect of Americanisation on the Earnings of Foreign-born Men." *Journal of Political Economy*, Vol. 86, pp.897-921.

Chiswick, Barry. 1991. "Speaking, Reading, and Earnings among Low-skilled Immigrants." *Journal of Labor Economics*, vol.9, n.2, pp.149-170.

Clark K. Drinkwater S., (2002), 'Enclaves, Neighborhood Effects and Employment Outcomes: Ethnic Minorities in England and Wales', *Journal of Population Economics*, **13**, 5-30.

Clemens M., 2009, Skill Flow: A Fundamental Reconsideration of Skilled-Worker Mobility and Development, Human Development Research Paper n.2009/08.

Coda Moscarola F.(2001) The Effects of immigration Inflows on the Sustainability of the Italian Welfare State, CeRPWP6/01

Commander S., M. Kangasniemi, L.A.Winters, 2003, Brain drain: Curse or boon? A Survey of the Literature, IZA D.P.809.

Constant, Amelie and Douglas S. Massey. 2003. "Self-selection, Earnings, and Out-migration: A Longitudinal Study of Immigrants to Germany." *Journal of Population Economics*, Vol. 16, No. 4, pp. 631–653.

Constant A., Zimmermann K., (2007), 'Circular Migration: Counts of Exits and Years Away from the Host Country', *IZA D.P*. 2999.

Cortes P., Tessada J., 2011, Low Skilled Immigration and the Labor Supply of Highly Educated Woman, *Applied Economics*.

Cox A., *Ureta*, M, 2003, International Migration Remittances and Schooling: Evidence from El Salvador," Journal of Development Economics in 72 (2), 429–461.

Daneshvary N., Herzog H.W., Hofler R.A., Schlottmann A. M., 1992, Job search and Immigrant Assimilation: An Earning Frontier Approach, *The Review of Economics and Statistics*, vol.74, n.3, pp.482-492

Daveri F., Faini R., 1999, Where Do Migrants Go? Risk-Aversion, Mobility Costs and the Locational Choice of Migrants, *Oxford Economic Papers*, pp-595-622.

Davies J.B., Wooton I., 1992, Income Inequality and International Migration, *The Economic Journal*, vol.102, pp.789-802.

Defoort C. 2008, Long Term Trends in International migration: an analysis of the six main receiving countries, *Population*, 63,2, 317-352.

De Giorgi G., Pellizzari M., 2006, Welfare Migration in Europe and the Cost of a Harmonised Social Assistance, IZA D.P.2094

Dell'Aringa C., Neri F., 1987, Illegal Immigrants and the Informal Economy in Italy, *Labour*, vol.1,2, pp.107-126.

Docquier F., Rapoport H., 2011, Globalization, brain drain and Development, UCL DP9.

Docquier F., Lodigiani E., Rapoport H., Schiff M., 2011, Emigration and Democracy, World Bank Policy Research WP5557.

Docquier, F. Marfouk, A. 2006, International migration by educational attainment (1990-2000) - Release 1.1 In C. Ozden and M. Schiff (eds). *International Migration, Remittances and Development*, Palgrave Macmillan: New York (2006).

Docquier F., OzdenC., Peri G.,2010, The wage effect of immigration and emigration, NEBR 16646.

Dolado J., Goria A., Ichino A., 1994, Immigration and Growth in the Host Country, *Journal of Population Economics*, vol.7, n.2, pp.193-215.

Dustmann C., 1993, Earnings Adjustment of Temporary Migrants, *Journal of Population Economics*, 6, pp.153-186.

Dustmann C, 1996, Return migration the European Experience, *Economic Policy* 22, 214-250.

Dustmann C. 2003, Return Migration, wage differentials and the optimal migration duration, *European economic review*, 47(2), 353-369.

Dustmann, Christian, and Arthur van Soest. 2002. "Language and the Earnings of Immigrants." *Industrial and Labour Relation Review*, Vol. 55, No. 3, pp. 473-492.

Dustmann, Christian and Francesca Fabbri. 2003. "Language proficiency and labour market performance of immigrants in the UK." *The Economic Journal*, Vol. 113, pp.695-717.

Dustmann C., Weiss Y., 2007, Return Migration: theory and empirical evidence from the UK, *Bristish Journal of Industrial Relations*, 45(2) 236-256.

Dustmann *C.*, Frattini T. Preston, *I.* 2008. *"The Effect of Immigration along the Distribution of Wages," CReAM Discussion Paper Series 0803.*

Eichhorst W., Giulietti C., Guzi M., Kendzia M., Frattini T., Nowotny K., Huer P., Vandeweghe B., 2011, The integration of Migrants and its effects on the labour market, 2011, EMPL, European Parliament's Committee on Employment and Social Affairs.

Easterly, W. and Nyarko, Y. (2008), Is the brain gain good for Africa, Brooking Global Economy & Development WP.

European Commission, 2006, *Communication from the Commission to the European Parliament and the Council.The Global Approach to Migration One Year On: Towards a Comprehensive European Migration Policy*, COM (2006) 735;

European Commission, 2007, *Communication from the Commission to the European Parliament and the Council. Applying the Global Approach to Migration to the Eastern and South-Eastern Regions Neighbouring the European Union*, COM (2007) 247.

European Integration Consortium, 2008, Labour mobility within the EU in the context of enlargement and the functioning of the transitional arrangements, European Commission.

ETF, 2009, Ukraine Country Report, Black Sea Labour Market Reviews, ENPI 08-14

Faini, R., (2005), Immigration in a Globalizing World, http://www.un.org/esa/population/meetings/ittmigdev2005/Faini_pp.pdf

Faini R., Strom S., Venturini A., Villosio C.,2010, Are foreign migrants more assimilated than native ones?, IZA D..P.4639.

Faini R., Venturini A., 2010, *Development and Migration: Lessons from Southern Europe*, in Gil S. Epstein, and Ira N. Gang, N. (ed) Frontiers of Economics and Globalization, volume 8, Migration and Culture, Emerald Group Publishing Limited, ISBN: 9780857241559pp.105-136.

Ferri J., Gomez-Plana A.G., Martin-Montaner J., 2000, General Equilibrium Effect of Increasing Immigration: the Case of Spain, paper presented at the 2000 ESPE Annual Conference in Bonn, 2001,University of Valencia, Departamento de Analisis Economico, Working Paper 01-02.

Fertig, Michael, Stefanie Schurer. 2007. *"Labour Market Outcomes of Immigrants in Germany: The Importance of Heterogeneity and Attrition Bias."* IZA Discussion Paper No. 2915, Bonn.

Filer R., 1992, The Effect of Immigrant Arrival on Migratory Patterns of Native Workers, in Borjas G.J., Freeman R. (eds) *Immigration and the Work Force*, University of Chicago Press, Chicago.

Flick JR, Smeeeding TM, Wagner GG 1999, Immigrants in Two Modern Nations: Characteristics of the Foreign and Native Born Populations in Germany and the United States, Vierteljahrshefte zur Wirtschftsforchung vol.68, n. 2, pp.297-307.

Funkhouser, Edward, "The Effect of Emigration on the Labor Market Outcomes of Sender Households: A Longitudinal Approach Using Data from Nicaragua," *Well-Being and Social Policy* in *2*, ed. , 2006, 5–25.

Garson J-P., Tapinos G., 1981, *L'argent des immigrés*, Presses Universitaires de France, Paris.

Gavosto A, Venturini A, Villosio C. Do Immigrants Compete with Natives?*Labour* 1999; 13; 603-622.

Gibson J., McKenzie D., 2011 Eight Questions about Brain Drain, WB Policy Research Working Paper 5668

Giuliano P., Ruiz-Arranz M., 2005, Remittances, Financial Development, and Growth, IMF WP./05/234.

Giulietti C., Guzi M., Kahanec M., Zimmermann K., 2011, Unemployment Benefits and Immigration: Evidence from the EU, IZA DP6075.

Granier, R. and Marciano, J.P. 1975. "The earnings of immigrant workers in France." *International Labour Review* Vol. 111, 143-165.

Green F., Machin S., Wilkinson D., 1998, The Measuring and Determinants of Skills Shortages, *Oxford Bulletin of Economics and Statistics*, 60,2, 165-187.

Gupta S., Patillo C., Wagh S., 2007, Making Remittances work for Africa, Finance and Development,44, IMF

Gustafsson B., Osterberg T. (2001) Immigrants and the public sector budget-accounting exercise for Sweden, *JPE*, vol14, 689-708,

Hansen J., Lofstrom M 2009. "The dynamics of immigrant welfare and labor market behavior," *Journal of Population Economics*, Springer, vol. 22(4), 941-970, October.

Halsmayer Schuh Shrivanek 2088, The Impact of Migration on Welfare Systems and Social Services in EU-15 Member States, Research Note European Commission DG Employment, Social Affairs and Equal Opportunities, Unit E1-Social and Demographic Analyis.

Hart R.A., 1975, Interregional Economic Migration: Some Theoretical Considerations, partII, *Journal of regional Science*, vol.15, 5, pp.289-305.

Hatton, Timothy J. and Andrew Leigh. 2007. *"Immigrants Assimilate as Communities, not Just as Individuals."* IZA Discussion Paper No. 2538.

Hatton,TJ, Tani M. Immigration and inter-regional mobility in the UK, 1982-2000. *The Economic Journal;* 2005;11; F342-F358.

International Monetary Fund, 2005, World Economic Outlook, Chapter 2.

Ivankhnyuk I., 2006, Brain Drain from Russia: in search for a solution, International Conference Bruxelles.

Katz E., Stark O., 1986, Labor Migration made Asymmetric Information with Moving and Signalling Costs, *Economic Letters*, n. 21, pp. 88-94.

Kindelberger C., 1967, *Europe's Postwar Growth. The Role of Labor Supply*, Harvard University Press, New York.

Kupets O., 2011, Brain Gain or Brain waste? The performance of Return Labor Migrants in the Ukrainian Labor Market, EERC, WP 11/06E

Langley P.C., 1974, The Spatial Allocation of Migrants in England and Wales, *Scottish Journal of Political Economy*, vol.XXI, 3, pp.259-277.

LaLonde, Robert and Robert Topel. 1992. *"The Assimilation of Immigrants in the U.S. Labor Market."* in George Borjas and Robert Freeman eds., Immigration and the Workforce, pp.67-92, Chicago: NBER, University of Chicago Press

Levine R., Loayaza N., Beck T., 2000, Financial Intermediation and Growth: Causality and Causes, *Journal of Monetary Economics*, 31-77.

Lewis A.W., 1954, Economic Development with Unlimited Supplies of Labor, *The Manchester School of Economic and Social Studies*, 22, pp.139-191.

Lidgard J., Gilson C., (2002), 'Return Migration of New Zealanders: Shuttle and Circular Migrants', *New Zealand Population Review*, **28**(1), 99-128.

Lingxin H., *Kawano*. Y., *2001*. "Immigrants' Welfare Use and Opportunity for Coethnic Contact." *Demography* 38:375-389

Lodigiani E., Salomone S., 2011, Migration-induced Transfers of Norms. The case of Female Political Empowerment, TEMPO Conference, mimeo.

Lucas R., 1988, On the Mechanics of Economic Development, *Journal of Monetary Economics*, 22, pp.3-42.

Lutz V., 1961, Some structural Aspects of thr Southern Problem. The Complementarity of Immigration and Industrialism, *Quarterly Review*, Banca Nazionale del Lavoro, pp.367-402.

Mackay D.F., White M.J., 1995, Occupational Segregation and the Immigrant Worker in the U.K.: An Ordered Probit Approach, Paper presented at the Annual EALE Conference, Lyon, Sept.

Mahmoud O.T., Rapoport H., Steinmayr A., Trebesch C., 2011, Do Migrants Remit Political Changes? Labor Migration and the Demise of Communism in Moldova, TEMPO Conference, mimeo.

Manacorda M, .Manning A., Wadsworth J., 2006. "The Impact of Immigration on the Structure of Male Wages: Theory and Evidence from Britain," CEP Discussion Papers dp0754, Centre for Economic Performance, LSE

Mankiw G.N., Romer D., Weil D.N., 1992, A Contribution to the Empirics of Economic Growth, *Quarterly Journal of Economics*, vol.107, pp.407-437.

Mansur A., Quillin B., 2006, Migration and remittances, Eastern Europe and the Former Soviet Union, World Bank.

Massey D., Parrado E., 1998 International Migration and Business Formation in Mexico. Social Science Quarterly 79 (1): 1-20.

Mayda A.M., 2010, International Migration: A panel data analysis of the determinants of bilateral flows, *Journal of Population Economics*, 23(4), 1249-1374.

McKenzie D., Rapoport H., 2010, Self Selection patterns in Mexico-US migration: The role of Migrant networks *Review of Economics and Statistics*, 92(4) 811-21.

Mountford A., 1997, Can Brain Drain Be Good for Growth in the Source Economy?, *Journal of Development Economics*, vol.53, pp.287-303.

Mundaca G., 2005, Can Remittances Enhance Economic Growth? The Role of Financial Markets Development, mimeo University of Oslo.

Nannestad P, 2004, Immigration as a challenge to the Danish Welfare State, *European Journal of Political Economy*, 20(3), 755-767.

Narazani E., 2008, Microeconomic importance of remittances in Albania, mimeo.

Nielsen H.S., Rosholm M., Smith N., Husted L., 2004, Qualifications, discrimination, or assimilation? An extended framework for analyzing immigrant wage gaps, *Empircal Economics*, 29, pp.855-883.

Niesing W., van Praag B., Veenman J., 1994, The unemployment of ethnic minority groups in the Netherlands, *Journal of Econometrics*, vol. 61, pp. 173-196.

Oaxaca R., (1973), 'Male-Female Wage Differentials in Urban Labour Markets', *International Economic Review* **14**, 93-709.

Ortega F., Peri G., 2009, The Causes and Effects of International Migrations: Evidence from OECD countries 1980-2005, NBER WP:14833.

Ottaviano GM, Peri G. Rethinking the gains from Immigration: Theory and Evidence from the U.S., NBER Working Paper No 12497; 2006

Pellizzari M., 2011, The Use of Welfare by Migrants in Italy, IZA DP.5613

Pischke J.S., 1993, Assimilation and the Earnings of Guest-Workers in Germany, mimeo.

Pichara M., Vandean F., 2009, Return migration and occupational choice, IZA DP.3922.

Ratha D., Mohapatra S., Scheja E., 2011, Impact of Migration on Economic and Social Development, World Bank Policy Research WP5558

Razin A., Wahba J. (2011) Free vs. Restricted immigration: Bilateral Country Study, IZADP.5546.

Richarson S., 2007, What is a Skill Shortage? National Center for Vocational Education Research.

Riphan R., 2004, Immigration Participation in Social Assistance Programs, *Applied Economics Quarterly*, vol.50, n.4.

Rosholm, Ml, Scott K., Husted L. 2006. "The Times They Are A-Changing: Declining Immigrant Employment Opportunities in Scandinavia." *International Migration Review*, Vol. 40, pp. 318-347.

Sala-i-Martin, Xavier X., 1996. "Regional cohesion: Evidence and theories of regional growth and convergence," *European Economic Review*, Elsevier, vol. 40(6), pages 1325-1352, June.

Sarris A., Zografakis S., 1999, A computable general equilibrium assessment of the impact of illegal immigration on the Greek economy, *Journal of Population Economics*, vol.12, n1, pp-155-182.

Schmidt C., Stilz A., Zimmermann A., 1994, Mass Migration, Union and Government Intervention, *Journal of Public Economics*, vol.55, pp.185-201.

Sermet C., Laurier D., Khlat M., 1998, La morbidité dans les ménages originaires du Maghreb, sur la base de l'enquête Santé de l'Insee, 1991-1992, *Population*, vol.53, n.6, pp.1155-

Simon J., 1989, *The Economic Consequences of Immigration*, Oxford, Basil Blackwell.

Sjaastad L.A., 1962, The Costs and Returns of Human Migration, *Journal of Political Economy*, vol.86, 80-93.

Schiff,M. 2008. "On the underestimation of migration's income and poverty impact," *Review of Economics of the Household*, Springer, vol. 6(3), pages 267-284, September

Schmidt C., 1993, The Earnings Dynamic of Immigrant labour, CEPR, Discussion paper n. 763

Schmidt C., Stilz A., Zimmermann A., 1994, Mass Migration, Union and Government Intervention, *Journal of Public Economics*, vol.55, pp.185-201.

Solimano A., 2003,Worker Remittances to the Andean Region: Mechanisms, Costs and Development Impact, Multilateral Investment Fund-IDB, Quito.

Spilimbergo A., 2009, Democracy and Foreign Education, *American Economic Review*, 99(1): 528-43.

Stark O., Bloom D., 1985, The New Economics of Labor Migration, *American Economic Review*, 75, pp.173-178.

Stark O., Helmenstein C., Prskawetz A., 1997, A Brain gain with a Brain Drain, *Economic Letters*, vol.55, pp-227-234.

Straubhaar T., Weber R., 1994, On the Economics of Immigration: some empirical evidence for Switzerland, *International Review of Applied Economics*, vol.8. n.2, pp.107-129.

Straubhaar T., Weber R., 1994, On the Economics of Immigration: some empirical evidence for Switzerland, *International Review of Applied Economics*, vol.8. n.2, pp.107-129.

Swan N., Auer L., Chenard D., dePlaa A., deSilva A., Palmer D., Serjak J. Milobar L., 1991, *Economic and Social Impacts of Immigration*, Economic Council of Canada, Ottawa, Canada.

Tapinos G., de Rugy A., 1993, The Macroeconomic Impact of Immigration. Review of the Literature Published since the Mid-1970s, SOPEMI, *Trends in International Migration, Annual Report*, OEDC, Paris.

Taylor A.M., Williamson J., 1994, Convergence in the Age of Mass Migration, NRER Working Paper n.4711.

Todaro M., 1969, A Model of Labor Migration and Urban Unemployment in Less-Developed Countries, *The American Economic Review*, 59, pp.138-48.

Veneri C.M., 1999, Can Occupational Labor Shortages be Identified Using Available Data?, Monthly Labor Review, 122, 3, 15-21.

Venturini, Alessandra and Claudia Villosio. 2006. "Labour Market Effects *of Immigration into Italy: An Empirical Analysis." International* Labour Review, vol.145, n.1-2, pp.91-118**.**

Venturni A, Villosio C.,2008 *Assimilation of migrants in recent immigration countries: The Italian Experience*, OXREP, vol.24, n.3, pp.518-542.

Venturini A., Narazani E, 2011, Highly Skilled Migrants in the SEM and Sub-saharan Africa, AN.CARIM

Venturini A, Villosio C. Labour Market E¤ects of Immigration into Italy: An Empirical Analysis. *International Labour Review* 2006; 145; 91-118.

Wadensjö E., Orrje H., 2002, Immigration and the Public Sector in Denmark, Aarhus, Aarhus University Press.

Wahba J. 2004, Does international migration matter? A study of Egyptian return migrants in Arab Migration in a Globalised World, IOM Geneva.

Wadensjo E., Orrje H 2002 Immigration and the Public sector in Denmark, Aarhus Universitets forlag.

Wiskow C., 2011, International migration of health personnel-challenges and opportunities for North and West African countries, CARIM DP forthcoming.

Yang D., 2008, International migration, Human Capital, and Entrepreneurship, evidence from the Philippine Migrants' exchange rate shocks, The Economic Journal, 118, 591-630.

Zimmermann K., 1995, Tackling the European Migration Problem, *Journal of Economic Perspectives*, vol.9, n.2, pp.45-62.

Zorlu A., 2011, Immigrant Participation in Welfare Benefits in the Netherlands, IZA DP 6128